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From the Editor's Desk

Again we have a couple of significant articles on Cymbidiums in this issue. We welcome contributions and major show reports from the remaining state Cymbidium clubs and societies. Peter Rochfort continues a discussion on genetic malformations in Cymbidium flowers, plus a feature on Royale Orchids that continue to trade at Peats Ridge on the Central Coast of New South Wales.

Many Cymbidium enthusiasts had been critical of the coverage their favourite orchids were receiving in the AOR. It was hoped that this increase in content would convert to an increase in subscriptions, but this has yet to happen. It's very hard to please all orchidists, every issue. Sadly there seems to be so much negativity. I can only consider publishing material that is submitted to me. Yet many seem to be happy to leave the writing and promotion of orchids to "someone else". The national Cymbidium clubs no longer have a publication to promote their hobby. They left the AOR after being hoodwinked by an individual who promised them the world, but dismally failed to deliver. *Australian Cymbidium Scene* ran from only 2012 to 2017, and was like a local club newsletter, with a bit of colour. They had no idea it would only plod along for a few years! Sadly, during that time, the Cymbidium clubs lost touch with the gardening public, as this rebel publication catered only for existing society members, who would be attending the shows anyway! The ball is back in their court..... Perhaps "Cymbidiums Australia" may become a feature of the AOR again soon?

The primary hybrid *Dockrillia* Tweetie (as it was originally published) was registered by Australian orchid hybridist Phil Spence with the Royal Horticultural Society (RHS) in December 2002. The parentage was recorded as *Dockrillia fuliginosa* (seed parent) and *Dockrillia convoluta* (pollen parent). It was named Tweetie as a mark of respect to the late Audrey Madden, who was heavily involved with both the OSNSW and Orchid SPECIES (NSW) societies. Tweetie was the affectionate nickname given to Audrey by her husband Vic. However there is a bit of controversy surrounding the actual parentage and this is addressed in this issue, with photographs and other information as supporting evidence.

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David Banks
Australian Orchid Review
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Editorial copy:

Articles for publication and consideration should be sent to:
AOR Editor, David P. Banks, 39 Carole Street, Seven Hills, NSW 2147
Email: david@hillsdistrictorchids.com

All other correspondence to:

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Cover Shot
Cymbidium
Anastasia Wright
'Moonshadow'
(Marita x
Delta Goodrem)
Photo: Peter Rochfort.





Cymbidium
(Darch Classic x
Lovely Angel)
'Full Moon'
– A spectacular
showbench white from
a cross that produced
a percentage of very
high quality flowers.
Unfortunately there
weren't many seedling
of this cross grown

New Cymbidiums at Royale Orchids

Text and photos by Peter Rochfort

After the passing of Kevin Hipkins in March 2018, Royale Orchids is still operating and trading on the 38 acres at Peats Ridge, on the Central Coast of New South Wales. Now it is under the guidance of brother Ray Hipkins, nephew Clinton Hipkins plus local orchid expert Jody Cutajar and things are on the move. The nursery is open to the public more frequently and visitors are welcome.

In the six years that I worked at Royale Orchids I was able to photograph many of the plants in flower. I couldn't cover everything but in these situations I took photos of plants that I found interesting. The photos accompanying this article are a mixture of the old and the new.

Many growers around Australia and overseas have not been able to visit Royale for one reason or another. Very little photographic material has been published with the exception of the occasional photo in various journals. Kevin and I often differed in what appealed to us from the selection of cymbidiums that were flowering at the time. What you will see here is a Peter's-eye view of some of the orchids in the nursery. I was tasked with putting cultivar names on many of the seedlings that flowered, so that we didn't have to waste time wondering after the spikes had been cut off whether this plant or that plant was a good one.

If he didn't like a cultivar name that I had come up with, he would invariably change it afterwards. The captions accompanying the photos carry the cultivar name I gave the plants when I photographed them. I hope you enjoy the photos and perhaps drop by Royale Orchids at some stage this coming season to view their range of orchids first hand. ■

Peter Rochfort

P.O. Box 639

Gosford NSW 2250

Email: foxfireorchids@optusnet.com.au



Cymbidium
(Pebbles x Peggy Foo)
'Pink Doll'
- a beautiful well
balanced intermediate.
Again, there were
very few seedlings
of this cross



Cymbidium
[(Summer Nights x Mona Porter) x
Valley Legend] 'Green Orb'
- a very desirable intermediate of a colour
which is in high demand
and very scarce
throughout
the season

Cymbidium
 Doris Elizabeth Tagsold
 (John Wooden x Pink Champagne)
 A cross made by George Hatfield
 of California USA. This full shaped
 flower carries the fine speckles
 from its Pink Champagne parent.
 A number of the John Wooden
 varieties were also speckles
 because of their
 Solana Beach
 ancestry



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Cymbidium
Heath Ledger
(Joker 'Irish Mist' x
Valley Legend 'Gee Whiz')
- One of the more recent
crosses from Royale.
There weren't many
seedlings of this
cross grown

Cymbidium
Magic Bubbles
(Vogel's Magic x Pink Champagne)
- A Royale Orchids cross featuring
speckles which are beginning to
increase in popularity. Pink
Champagne is responsible for
producing spots on many of
its standard progeny while
the tetraploid version of
Vogel's Magic is being
used with miniatures
and intermediates to
achieve an even more
pronounced effect





Cymbidium Marie Bashir 'Royale' (Mighty Mouse x Wallacia) – A Royale Orchids cross which produced several eye-catching and spectacular two toned seedlings



Cymbidium Anastasia Wright 'Full Moon' (Marita x Delta Goodrem) – a Royale cross the top percentage of which were spectacular flowers. The cross produced a range of whites and blush whites in intermediate size and a small percentage of standards



Cymbidium Anastasia Wright 'Moonshadow' (Marita x Delta Goodrem) – this orchid is close to the best classic showbench style flower that one could hope for

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ADF 149

Cymbidium
(Intense Gold x Mighty Voice)
– one of the newer Royale Orchids
crosses. This full shaped seedling
was one of the best from the
cross. Several high quality
seedlings from this cross
were flowered at Royale



Cymbidium
Champagne Robin
(Pink Champagne x Robin)
– an Andy Easton cross which produced
some flowers of fabulous shape

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Cymbidium
Alfred George Read
'Motherlode'
(Karen x Trinity Gold)
- A spectacular yellow
from the Royale
breeding programme.
This orchid generally
produces an early spike or
two which can drop buds



Cymbidium
Marcellin Champagnat
'Royale' (Lunar Wall x
Viva Las Vegas)
- this champion seedling was
from one on the newer Royale
crosses. A two toned flower
which was a breeding line that
was bred by Royale Orchids

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Cymbidium
Jubilation 'Apache'
 (Borough Green x Wallara)
 - I found this interesting
 sport of Jubilation
 'Geronimo' amongst
 a group of mericlones
 the year before I left
 Royale. I called it 'Apache'
 and never saw it again.
 I don't know whether
 it was sold or whether
 it didn't flower in
 my last year there

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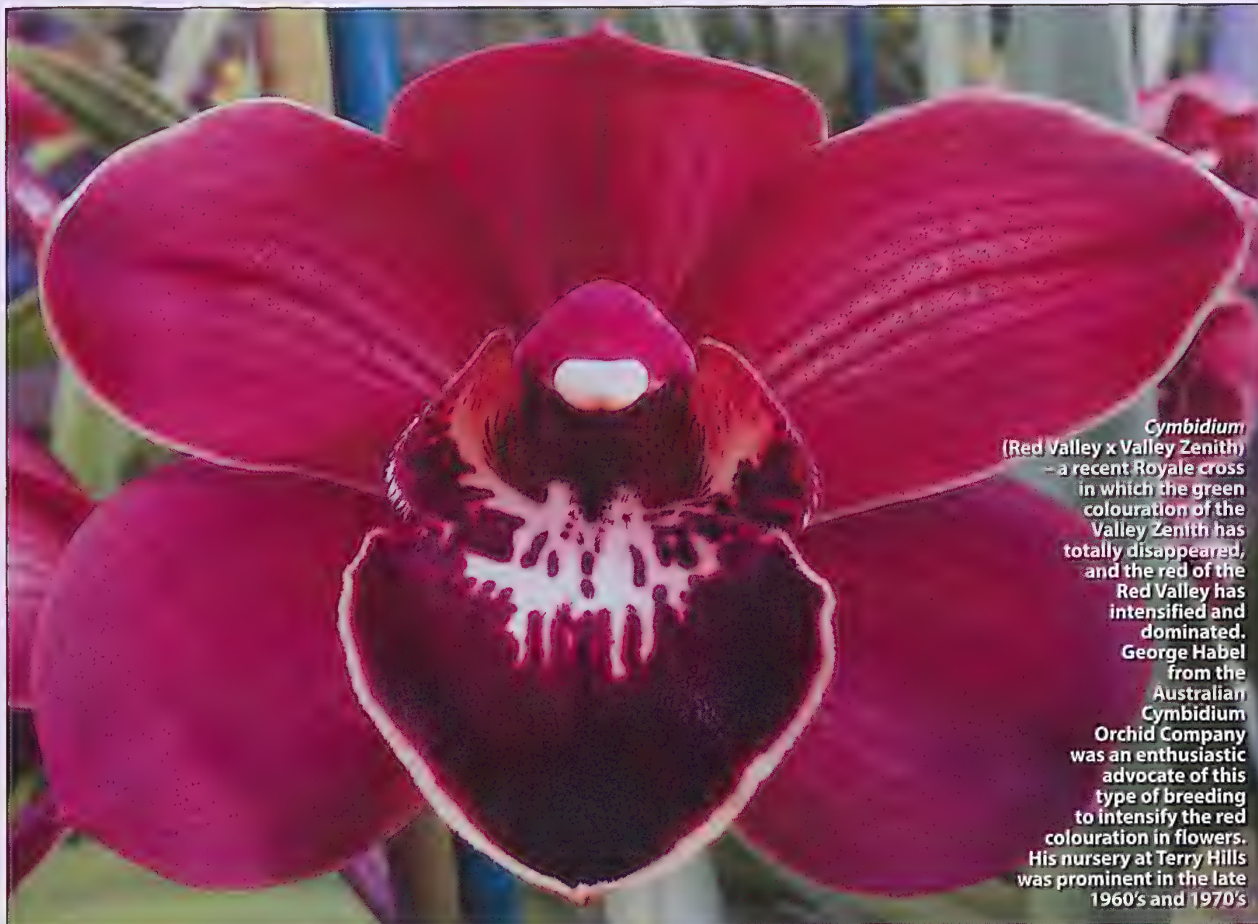


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Cymbidium
(Red Valley x Valley Zenith)
— a recent Royale cross
in which the green
colouration of the
Valley Zenith has
totally disappeared,
and the red of the
Red Valley has
intensified and
dominated.
George Habel
from the
Australian
Cymbidium
Orchid Company
was an enthusiastic
advocate of this
type of breeding
to intensify the red
colouration in flowers.
His nursery at Terry Hills
was prominent in the late
1960's and 1970's

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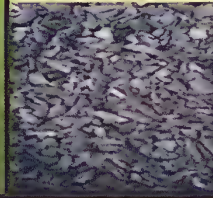
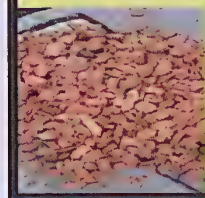
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Cymbidium Elle Ronis
'Charmer' (Khan Flame x
Kabuki Moon)
- probably the best all
round orchid from this
cross and the parent of the
(Elle Ronis x Blushing)
cross which is producing
some spectacular results





Cymbidium
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'Royale Globe'
(Cymbiflor x Valley Zenith)
- who could ask for
more in a green than this.
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Cymbidium
(On the Prow x Red Beauty)
- This cross has never been registered. A few people somehow think it as *Cymbidium* Apl. However Royale registered Apl but the parents were (Pamela Anderson x On the Prow!)

Australian Orchid Review



WELCOMES EDITORIAL CONTRIBUTIONS

Please ensure that all slides, photographs and electronic files are clearly marked with the author's name and address

Address editorial to:

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Dockrillia Tweetie – a Pencil Orchid Hybrid with Confused Parentage from Papua New Guinea

Text and photos by David P. Banks

The primary hybrid *Dockrillia* Tweetie (as it was originally published) was registered by Australian orchid hybridist Phil Spence with the Royal Horticultural Society (RHS) in December 2002. The parentage was recorded as *Dockrillia fuliginosa* (seed parent) and *Dockrillia convoluta* (pollen parent). It was named Tweetie as a mark of respect to the late Audrey Madden, who was heavily involved with both the OSNSW and Orchid SPECIES (NSW) societies. Tweetie was the affectionate nickname given to Audrey by her husband Vic. Their daughter Irene Chalmers (formerly Bodell) is well known in orchid circles, especially within OSNSW as a judge and as an administrator. This hybrid is not to be confused with *Dendrobium* Tweetie, a “Softcane” hybrid from 2013.

This hybrid has had an identity crisis right from the start. It was created by Phil Spence, who has devoted a lifetime observing, growing, propagating and hybridising a wide range of unique and orchid hybrids, with many from left field. Phil’s original interest was purely Australian native orchids and their hybrids; he made and registered many groundbreaking hybrids in the 1970s and 1980s. Phil then saw much potential in creating hybrids with orchids from Papua New Guinea, an untapped huge potential breeding pool.

Phil made many trips to Papua New Guinea, and on occasion was able to bring back seeds of species that were unknown in Australian orchid collections, with quite a few being orchids completely new to science. His side business, Orchid Productions, had a laboratory for sowing of seeds and subsequent replates in flasks. Without Phil, there are many stunning orchids that may still not be readily available, such as species from Section *Latouria* *Dendrobium aberrans*, *Dendrobium alexandrae* and *Dendrobium convolutum*. I often feel that Phil did not get the kudos he deserved in Australia for his significant contribution to orchids.

In the 1970s, Sydney species orchid expert, Jack Jannese made a trip to Papua New Guinea where members of the party were able to purchase select plants from local villagers and import them back into

Australia, using Jack’s private quarantine house. In hindsight, almost 50 years ago, I doubt this was technically legal! Anyhow, this saw an array of completely new orchids enter cultivation here and become entrenched in cultivation. This included spectacular orchids like *Bulbophyllum fletcherianum*, *Bulbophyllum graveolens*, *Coelogyne fragrans*, *Dendrobium lawesii* and *Mediocalcar decoratum*.



Dockrillia Tweetie
‘S.B.’
(grower: Hills District Orchids)



Dockrillia
Tweetie
'Jester'
a superior
horticultural
form from the
selfing of the cultivar
'Huge'. Note the
influence of flower shape
from *Dockrillia caudiculata*
(grower: DUNO)

Most importantly, there were at least three small pieces of "pencil orchid" included with this shipment that survived the gassing and three months in quarantine. They "looked" a lot like our native Bridal Veil Orchid, *Dockrillia teretifolia*, or *Dendrobium teretifolium* as it was then known. It seems Phil ended up with three plants, which over much time growing would prove to be three different species upon blooming.

The first one to flower was given the tag name *Dendrobium teretifolium* 'Black Pam'. Apart from having terete leaves, it bore no similarities whatsoever with the true Australian *Dendrobium teretifolium*. But at the time there was no alternate validly published name, that's because it was a completely new orchid to science! Phil self pollinated this plant, and repeated this many times. Making flasks and seedlings available to interested orchid enthusiasts. It wasn't until 1996 that it was formally described as *Dockrillia fuliginosa* M.A.Clem. & D.L.Jones, in *Lasianthera* 1: 13. I would be confident to say that all of the plants of *Dockrillia fuliginosa* in cultivation in Australia today may be traced back to that single plant in Phil's greenhouse.

Then another one of those pencil orchids bloomed then another one. Phil gave one of these new ones the tag name of *Dendrobium teretifolium* 'Fiery Glow'. A hybrid was also made between the two, many simply labelled as 'Black Pam' x 'Fiery Glow'. When *Dockrillia convoluta* was also described in 1996, it was assumed that this was indeed 'Fiery Glow'. Unfortunately this was incorrect, as the 'Fiery Glow' to make the hybrid was in fact the related, and equally rare, *Dockrillia caudiculata* – also named at the same time.



Dockrillia fuliginosa
Expo NZ 2013, the
orchid that was originally
given the tag name of
Dendrobium teretifolium
'Black Pam'
(photo: Michael Harrison)

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ABR 111



Dockrillia caudiculata
This plant has been
in cultivation for
almost four decades
(grower: Mark Clements)

So how do we know this?

Whilst *Dockrillia fuliginosa* is now entrenched in cultivation (and features in over 20 hybrids), *Dockrillia convoluta* and *Dockrillia caudiculata* are very rare and poorly known, and refuse to self-pollinate. In Australia, I believe there has only ever been one clone of each enter the country.

Dockrillia convoluta is unique in having a bunched group of small blooms, with the flowers NOT presented upside down. *Dockrillia caudiculata* has its blooms loosely spaced and presented along the inflorescence, with that labellum uppermost. It also exhibits the same flower spacing, colours and patterning as seen in the hybrid *Dockrillia Tweetie*. I do not believe the true *Dockrillia convoluta* has been used in hybrids.

As *Dockrillia Tweetie* has been used in at least 22 hybrids (as at July 2019), it would make sense for the RHS to simply amend their records to show the parentage as (*fuliginosum* x *caudiculatum*) than re-register over twenty plus hybrids.

The *Dockrillia* species from Papua New Guinea are still relatively unknown to Australian orchid growers, so we will use this opportunity of showcasing these taxa for potential use as a future reference point for orchid judges and interested enthusiasts.

Dendrobium versus *Dockrillia*

Friedrich Gustav Brieger established the name *Dockrillia* back in 1981, which he used to loosely accommodate the so-called "terete-leaved" *Dendrobium* species. This treatment featured a number of errors and omissions, and was generally ignored by the botanical community at the time. The name, which commemorates the late respected author and naturalist Alick William Dockrill (1915-2011), was resurrected in 1996 in the first issue of the ephemeral journal, *Lasianthera*. It is predominantly an Australian and New Guinean genus, with outlying populations of taxa throughout parts of the Pacific Islands. The type species for the genus is *Dockrillia linguiformis*.

Many are still reluctant to accept the huge genus *Dendrobium* has been ongoing dissection into a number of smaller genera. It's the same position with *Bulbophyllum*.

A grab-bag for essentially very different orchids. I feel this is largely because we are familiar with them as *Dendrobiums* and simply do not want to learn new names. The only consistent character that keeps *Dendrobium* together as a super-genus is 4 waxy pollina and a mentum (spur) at the back of the flower. Other characters and vegetative morphology are not considered at all. This is inconsistent with the taxonomic treatment of other large groups of the world's orchids. It is hard to believe that *Dendrobium toressae* and *Dendrobium bigibbum* are placed in the same genus, either in or out of flower!

Dendrobium moniliforme from Japan and China is the Type species for the genus. In broad terms, the "true" *Dendrobiums* are the "softcane" species, which include the popular exotics *Dendrobium nobile*, *Dendrobium findlayanum*, *Dendrobium loddigesii*, *Dendrobium signatum* etc. In Australia we would therefore only have one true *Dendrobium*, being *Dendrobium stuartii* from North Queensland.

The main characters which separate *Dockrillia* from *Dendrobium* include:

- succulent leaves, which are often terete and cylindrical in cross-section
- pseudobulbs absent
- predominantly pendent growth habit, particularly on older plants
- flowers one to few on an inflorescence, off the previous seasons mature growth
- flowers generally non-resupinate, with the labellum uppermost

Some people incorrectly state that the genus *Dockrillia* is invalid. This is completely wrong. Common usage is generally the benchmark for accepted plant names. There is no one global arbitrator on this, even though the World Checklist of Selected Plant Families (WCSP), facilitated by the Royal Botanic Gardens, Kew is an outstanding resource. wcsp.science.kew.org

So it is equally correct to refer to these taxa either as *Dockrillia* or as *Dendrobium*. We seem to forget at times that the only reason we apply names to things is so we can communicate with a common understanding.



Dockrillia caudiculata
Flower detail. This is
the real 'Fiery Glow'
(grower: Hills District Orchids)

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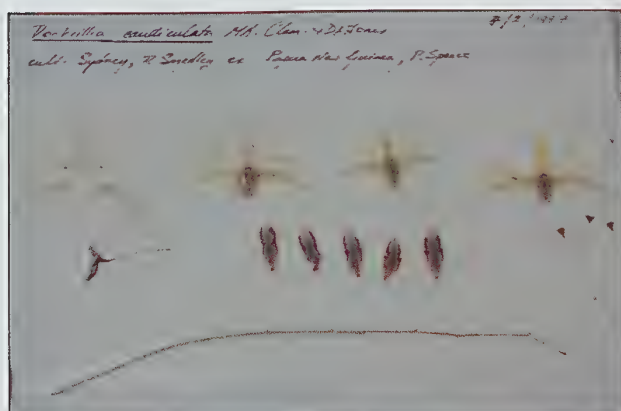
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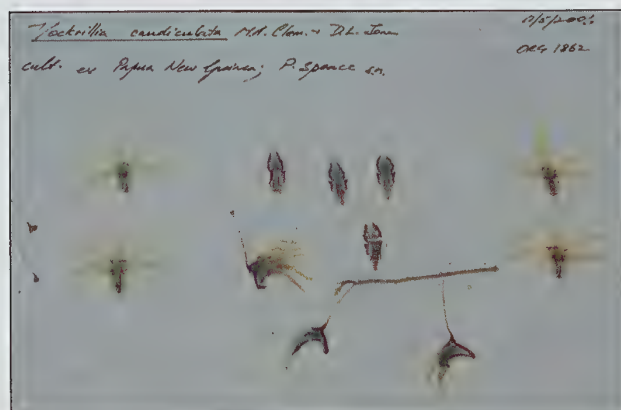
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Papua New Guinea species with alternate names as *Dockrillia* vs *Dendrobium* including year of valid publication

<i>Dockrillia</i>	<i>Dendrobium</i>
<i>Dockrillia caudiculata</i> (1996)	<i>Dendrobium caudiculatum</i> (2003) "Dendrobium teretifolium 'Fiery Glow'"
<i>Dockrillia chordiformis</i> (1983)	<i>Dendrobium chordiforme</i> (1910)
<i>Dockrillia convoluta</i> (1996)	<i>Dendrobium contextum</i> (2003)
<i>Dockrillia delicata</i> (1996)	<i>Dendrobium leptophyton</i> (2003)
<i>Dockrillia flagella</i> (1983)	<i>Dendrobium flagellum</i> (1912)
<i>Dockrillia fuliginosa</i> (1996)	<i>Dendrobium fuliginosum</i> (1998) "Dendrobium teretifolium 'Black Pam'"
<i>Dockrillia hepatica</i> (1996)	<i>Dendrobium erythraeum</i> (2003)
<i>Dockrillia nothofageti</i> (1996)	<i>Dendrobium nothofageti</i> (2003)



Dockrillia caudiculata floral dissection card dated 4th February 1997 from a Darryl Smedley plant, ex Murray Corrigan per Phil Spence



Dockrillia caudiculata floral dissection card dated 11th May 2006 from the Phil Spence plant. Exact same plant as depicted on other card from 1997

The taxonomy of *Dockrillia* has been confusing. Many taxa were misidentified at the time they were known as *Dendrobiums*, leading to a number of conflicting but necessary name changes in the late 1980s. Also many wrongly labelled plants have been perpetuated, many as seedlings. Plants of *Dockrillia chordiformis* were sold off as seedlings of *Dockrillia flagella*.

Whilst the name *Dockrillia baseyana* has been applied to the high elevation rainforest form of *Dockrillia calamiformis* from Mt. Lewis and the Mount Windsor Tableland in North Queensland. The Type of *Dockrillia baseyanum* (as *Dendrobium baseyanum*) was from Kings Plains, a lowland dry scrub habitat ~20km south-west of Cooktown, North Queensland. Alick Dockrill mentions in his revision of *Australian Indigenous Orchids* from 1992 that he grew a piece of the Type plant for years (given to him by St. Cloud who named it) and could not differentiate it from *Dockrillia calamiformis* (at the time known as *Dendrobium teretifolium* var. *fasciculatum*).

For a while, almost two decades ago, the Royal Horticultural Society (RHS) in London accepted *Dockrillia* as a valid genus for botanical purposes. However, for hybridisation purposes, it continues to include any such combinations within *Dendrobium*. In recent times the term *Dockrillia* has been applied in brackets next to the genus name, so they are acknowledging the difference.

Phone 0265811735 Fax 0265811736
Email theorchidpotco@gmail.com
21 JAMBALI ROAD
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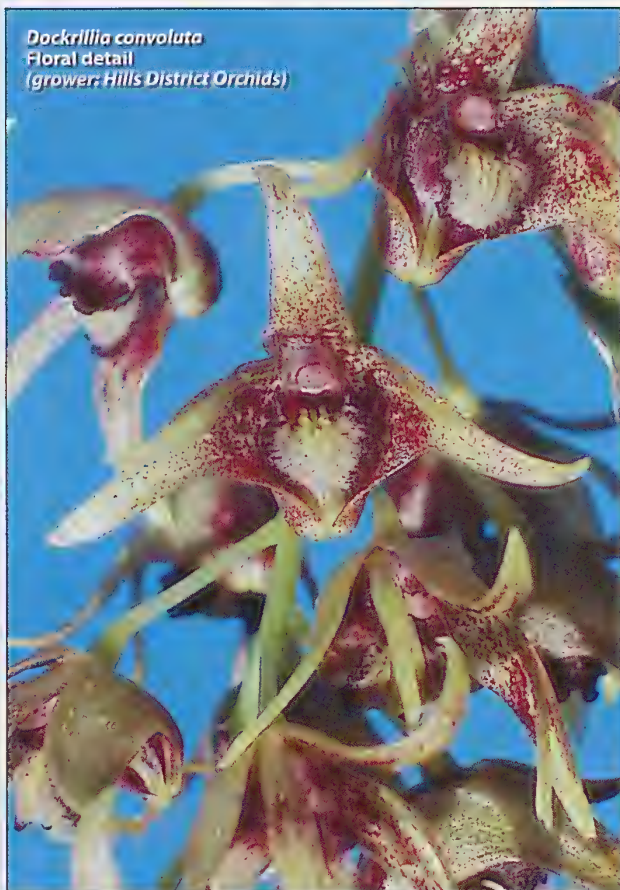
Dockrillia convoluta
Note bunched flowers
and labellum position
(grower: Hills District Orchids)

Frankly, I would be happy for all such hybrids to appear under the name *Dendrobium*, instead of creating numerous and ongoing new and meaningless artificial generic names. Maybe it would be easier if the number of genera were reduced. Keep them all as *Dendrobium*, *Bulbophyllum*, *Catasetum*, *Vanda*, *Phalaenopsis*, *Oncidium*, *Cattleya*. Now that's something to ponder! ■

David P. Banks
Hills District Orchids
Seven Hills NSW
Email: david@hillsdistrictorchids.com



Dockrillia hepatica
Morobe Province, PNG
(grower: Mark Clements)



Dockrillia convoluta
Floral detail
(grower: Hills District Orchids)



Dockrillia hepatica
(grower: Hills District Orchids)



Dockrillia delicata
Type ex Bulolo, PNG
(grower: Hills District Orchids)



Dockrillia delicata
Type ex Bulolo, PNG
(grower: Hills District Orchids)



Dockrillia chordiformis
(grower: Fred Fear)



Dockrillia chordiformis
(grower: Hills District Orchids)



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Dockrillia flagella
ex Ramu River PNG
(grower: Hills District Orchids)



Dockrillia flagella
ex Ramu River PNG
(grower: Hills District Orchids)



Dockrillia nothofageti
(sp. 'Wamena')
(photo: Jeffrey Champion)





Dockrillia aff. *calamiformis*
 this is the high elevation
 rainforest form that occurs
 above 800m on Mt Lewis and
 nearby Mount Windsor
 Tableland. It is a fairly sparse
 grower with fine narrow leaves
 and has been confused
 with *Dockrillia bayesiana*
 (plant & photo: Michael Harrison)



Dockrillia calamiformis
 showing various clones within
 this complex formerly known as
Dendrobium teretifolium var. *fasciculatum*
 (photo: Michael Harrison)

Avoiding Deformities in Standard Cymbidiums

Text and photos by Peter Rochfort

In the June/July 2018 issue of the *Australian Orchid Review* I wrote an article which discussed why there are so many deformities in current show bench Cymbidiums. It also highlights the fact that most of the older diploid Cymbidiums that don't exhibit these deformities only now exist in the collections of very old growers or enthusiasts that are not members of orchid societies.

The problem with very old growers is that many of these collections have virus problems or labels have been lost over the years. A Sydney grower who moved to the Central Coast, Bill Davison who is no longer with us, had some old tetraploids including Rosanna 'Pinkie', Etta Barlow 'Cabramatta', Balkis 'Silver Orb', Bartolme Ferello 'Patrician', Etta Barlow 'Debbie' and several others. His collection has now disappeared. Kevin Black had some important diploids as did South Sydney grower Don Jones. Ray Deane from Glenbrook and Alan Merriman from Miriam Ann Orchids had some useful diploids. Royale Orchids still has a couple, as I suspect does Barrita Orchids. Sky High Orchid Wholesalers who were opposite Royale Orchids no longer exist. What happened to the diploids that were in the collection at Cecil Park Orchids and Norm Loaders Nursery? Are there still diploids in the late Jim Burstal's collection? Where did all their plants go? Dr. Baker, Bob Waabel, Tom Henry, Norm Wyborn and George Habel from the northern beaches of Sydney all had valuable diploids in their collections. Where did all their plants end up?

We should mourn the loss of all these plants because they presented alternative pathways of development which may have avoided the problems inherent in current show bench Cymbidiums. The importance of some of these diploids is that they can be cloned and treated with Colchicine or Oryzalin to convert a percentage of them to tetraploids. Admittedly, many of the older collections were made up of a plethora of triploids which were used for cut

flower production and some for show bench use and as such won't be missed.

I mentioned in the original article on deformities that I had also made up a list of varieties that, to the best of my knowledge, do not carry the deformity gene. The problem is that

they are usually of a more starry shape than current show bench varieties, (which should not be seen as a fault), and do not carry the gene for rounded shape that comes from the use of *Cymbidium parishii* and *Cymbidium sanderae* in their backgrounds. The importance of gathering these old diploids together cannot be overstated. It's not that there is any great monetary value in them; they are important as a gene bank in themselves, and as insurance that we have their genes to correct or avoid the faults in current show bench Cymbidiums.

I would like to digress for just a moment to make an observation. In visiting the shows around the traps for quite a number of years it is becoming increasingly more obvious that there is a boring sameness pervading the standard Cymbidiums which are exhibited. Most show growers all have the same old clones and even the new seedlings that are shown are so obviously similar to the other varieties that are exhibited. We need to inject some interest in to the *Cymbidium* scene. Even the displays of gracefully arching varieties would be refreshing. Many of the old diploids, especially with *Cymbidium lowianum* in their backgrounds carry the genetic material that is needed. Imagine an arching display of the best converted tetraploids of some of these old varieties.

Surely the various Cymbidium societies could start a gene bank of old and useful diploids. I know there are antique classes in some clubs but that is not the same thing. This is about preserving our heritage not whether we win a prize or not. So please, check with your friends to see if they have some of the diploids that are listed below. Make sure they are virus free and see if you can acquire a piece of the plant. If you are not sure it is a diploid check with knowledgeable growers in the *Cymbidium* clubs, or contact me. The sooner we start to do this the better chance we have of rescuing those varieties that are fast disappearing. The following list can probably be added to as I'm sure I have missed out listing some varieties.

Here is the list that I have already compiled along with their parents which we are also seeking. However, many of the crosses that were made using Alexanderi were not made using the famous tetraploid 'Westonbirt' variety. They were made using various diploid versions from the Alexanderi cross and this is the case with most of the Alexanderi crosses in this list. Also, a high percentage of the cymbidiums in this list were current in the early 1960's when I was building up my collection. Maybe you have friends whose orchid growing parents are no longer alive. Maybe they have inherited their parents' collections and just maybe, some of the plants in this list are in those collections. Please do some investigating and check.

Australian
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SUBSCRIPTION RENEWAL NOTICES

Please note: Due to the increase in postage costs from 1st January 2016, subscription renewal notices will no longer be sent out, as the subscription expiry date is already printed on the mailing sheet just above the subscriber's name, so please keep an eye out on the mailing sheet for your expiry date.

Diploids (2n)

- Adele Sander 'Narcissus' – (Alexanderi x St Alben)
- Albania – (Albanense x Alexanderi)
- Alnwick Castle 'Brentwood' – (Reginald x Corinth) a pure colour carrier. Does have *sanderiae* in its background but is important and needs to be saved.
- Apollo 'Exbury' – (Miranda x Curlew)
- Arabella – (Schlegelii x Eburneo-lowianum) not Arabella II which has different parentage and is probably triploid.
- Baldur – (Castor x Alexanderi)
- Baltic AM – (Midas x Riga) not 'Leanne Sessions' which is not a Baltic.
- Barina – (Lucy x Willow Vale)
- Berwick – (Cambria x Carisette)
- Bodmin Moor – (Alexanderi x Erica Sander)
- Borough Green – (Baltic x Nicky)
- Bungalow – (Wyanga x Cariga)
- Cariga 'Sorrento' and 'Burmah' – (Carlos x Riga)
- Carisbrook – (Ceres x Ralph Sander)
- Carramar – (Lucy x Rutana)
- Castor – (*insigne* x Woodhamsianum)
- Ceres 'F. J. Hanbury' – according to Andy Easton. Actually a Ralph Sander
- Constance 'Barbara' – (Schlegelii x Coningsbyanum)
- Crater – (Cariga x Ngaire)
- Durham Castle 'Brilliance', Durham Castle 'Irene', Durham Castle 'Snow Princess' (Ruth x Plover) the first is a pure colour carrier and the second and are white pure colours.
- Edward Marshall – (Albatross x Doris)
- Edzell 'Elizabeth' – (Lysander x Ceres)
- Ethel Webber 'Brentwood' – (Miranda x Lysander)
- Granny Smith 'Tee Pee' – (Wyanga x Borough Green) NB: if this is not a triploid.
- Guelda – (Coningsbyanum x Doris)
- Heathrow 'Mary Bea' – (Claudette x Erica Sander)
- Henry Davis – (Alexanderi x Diadem)
- Janine 'Imperial' – (Schlegelii x Albania)
- Jason 'Mablethorpe' – (Alexanderi x Miranda)
- Keera – (Rutana x Wondah)
- Liliana 'Tudor Rose' – (Lillian Sander x Louisiana)
- Lucy Moor – (Bodmin Moor x Lucy)
- Lucy, (Doris x Lucastes), including the varieties 'Porters Green', 'McNeils Green', 'Hawley's and 'Goldcrest'.
- Lucastes – (*hookerianum* x Warbler)
- Lustrous 'Betty' – (Louisiana x Sunrise)
- Lutescens 'Yagoona' – (Auriga x Miranda)
- Mandarin – (Wheatear x Miranda)
- Matana 'Maxine' – (Claudette x Ramboda)
- Mayfair 'Stonehurst' – (Edzell x Olympus)
- Midas – (Pauwelsii x Miranda)
- Mildred Hunter – (Lysander x Edzell)
- Minivet – (Castor x Eburneo-lowianum)
- Miranda – (Alexanderi x Lowio-grandiflorum)
- Musita 'Elanora' – (Profita x Remus)
- Mutawa 'Infra Red' – (Warella x Whyba)
- Ngaire 'Kurringai' – (Clarissa x Rio Rita)
- Nicky 'Kurringai', Nicky 'Fine Var' – (Erica Sander x Radak)
- Nile – (Ramesis x Baltic)
- Pearl 'Magnificum'
- Pearly Queen 'Glendessary'
- Princesse Astrid 'Dorothy' – (Eagle x Vesta)
- Profita 'Kirribilli' – (Profusion x Rio Rita)
- Radak 'Oasis' – (Claudette x Pearl)
- Ramboda 'Merrilong', Ramboda 'Majestic', Ramboda 'Bayview' – (Pearl x Venus) some Rambodas carry the pure colour factor.
- Ramesis – (Midas x Ramboda)
- Rampur – (Ramboda x Lucy) including '300'
- Rathel – (Mayfair x Spartan Queen)
- Regency – (Remus x Mayfair)
- Remus FCC – (Regulus x Joyful)
- Rio Rita 'Radiant' – (Pearl x Ruby)
- Rutana 'Kirribilli' – (Coningsbyanum x Pearl)
- Shina Black – (Curlew x Edzell)
- Sirius – (Wylan x Lucy) including the varieties 'White', 'Boronia' and 'Bexley', some varieties of Sirius carry the pure colour factor through the Wylan parent.
- Siram – (Sirius x Rampur)
- Spartan Queen 'Merrilong' – (Regina x Sparta)
- Supreme Destiny – (Wyanga x Durham Castle) NB: diploid forms of the cross only
- Tintagel – (Schlegelii x Eagle)
- Valley Flame 'Kiandra', 'No 52' – (Lustrous x Lutescens)
- Vangie – (Castor x Erica Sander)
- Voodoo 'Black Magic' – (Clarissa x Auribrook)
- Wallane 'White Triumph' – (Lustrous x Lucy)
- Warella 'Wondabah' – (Lustrous x Sirius) an important pure colour carrier
- Westholme 'No.8' – (Lustrous x Wylan) a pure colour carrier. Also other Quality Westholmes.
- Wondah 'The Globe' – (Lucy x Remus)
- Wyanga 'Elanora', Wyanga 'Supreme' (Ramboda x Sirius) – 'Elanora' is a pure colour and 'Supreme' carries the pure colour factor.
- Wylan 'Sailor Bay' – (Astra x Joy Sander) a pure colour carrier

If you or someone you know has good diploid varieties of plants on this list, other than those mentioned please include those.

The aim in collecting these old diploids is to establish breeding lines that are practically free of flower deformities. Selected diploids can be mericlone and colchicine treated to create a breeding bank of deformity free tetraploids. Also the best from intercrossing these diploids can be set aside and mericlone and colchicine treated. This can be useful for complementing the shortcomings in both parents e.g. short spike x long spike, low flower count x high flower count, slow grower x vigorous grower, increasing colour intensity, improving spike habit, etc.

From a current showbench judging format these creations will have more pointy segments than existing classic show bench varieties. This is not to say that they won't be reasonably filled in. If you wish to show these varieties then a new showbench category will need to be created to cater for this type of flower. Rounded shape cannot be a criterion. I will be long gone by the time these developments reach full steam so it is important that younger growers continue the development.

Peter Rochfort
P.O. Box 639

Gosford NSW 2250

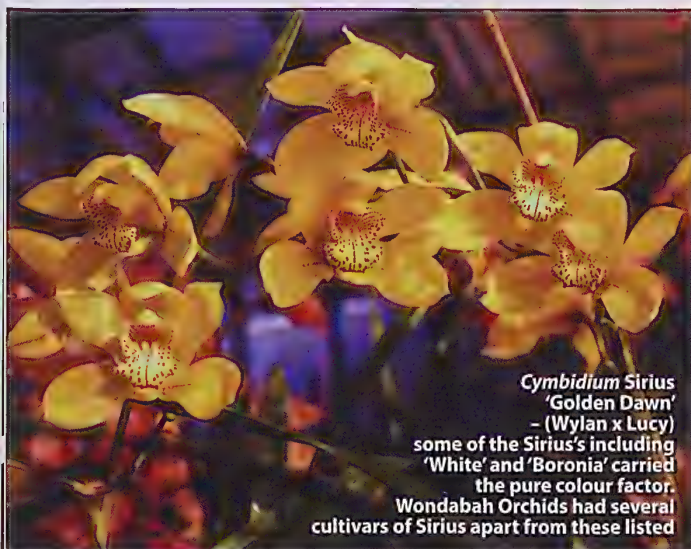
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Cymbidium Edward Marshall 'Mali'
– Incorrectly listed as one parent of the famous early tetraploid, Early Bird 'Pacific' (an orchid I would love to acquire)



Cymbidium Rampur '300' – (Ramboda x Lucy)
valuable additions to the green breeding bank.
'300' was a seedling flowered by Sydney grower Jack Metcalfe with 'Janice' used by Alvin Bryant in the early days



Cymbidium Sirius 'Golden Dawn'
– (Wylan x Lucy)
some of the Sirius's including 'White' and 'Boronia' carried the pure colour factor.
Wondabah Orchids had several cultivars of Sirius apart from these listed



Cymbidium Siram '#1260'
– (Sirius 'Metcalfe' x Rampur '300')
the best from this cross were used for further breeding



Cymbidium Lustrous 'Betty'
– (Louisiana x Sunrise)
I have seen Lustrous 'Betty' around the traps in recent years.
It formed the backbone of George Habel's pink cut flower production in the early 1960's (Australian Cymbidium Orchid Company at Terrey Hills, NSW) and he grew it very well. (photo: Santa Barbara Orchid Estate)



Cymbidium Valley Flame
'No 52' – (Lustrous x Lutescens)
these were from George Habel's nursery and registered by others.
Both had high flower count.
'Kiandra' had an upright spike and 'No 52' a tall arching spike and high flower count



Neobenthamia gracilis
- head of flowers
in full bloom

Neobenthamia gracilis

Text and photos by David Banks

Neobenthamia is a monotypic genus from Tanzania in Africa (only one species in the genus). It is a grassy terrestrial or occasional lithophyte, with upright branching stems that resemble miniature bamboo, growing up to two metres tall in the tropics, down to almost half that size in more temperate climates. Older plants may appear untidy if not regularly staked and trimmed.

It's never been a fashionable species in cultivation, and was very common in Australian collections a few decades ago. However a fresh block of vigorous plants have proved popular with the next generation of orchid growers, seeking that plant that's a little bit different. Tinonee Orchid Nursery (NSW) also stocks this species for sale, yet it does not appear in any of their catalogues!

It grows well in deep pots, to accommodate the vigorous, fleshy root system, in a rich terrestrial/bark mix that is well drained. It appreciates constant water and fertilising as this plant is almost always in some stage of growth.

It needs strong light to bloom, and intermediate to warm conditions. During the warmer months, the plants respond well to being placed in shallow (25mm) saucers of water. Mature plants will regularly produce new plantlets/keikies, and these can be removed and potted once a group of roots has formed. Some growers place plants grown in plastic pots into larger terracotta ones for both decorative purposes, plus such top heavy plants are less likely to blow over in strong winds. It is so hardy that it may be grown as a garden plant in frost free climates.

Neobenthamia gracilis has terminal clusters of up to 50 or more fragrant white 25mm blooms, with a white and yellow labellum, with pale lilac spots. The flowers have an unusual and strong cheesy-bacon like fragrance, most noticeable throughout the warmer parts of the day. In western Sydney it flowers throughout the warmer months, whilst being in almost continual bloom in the lowland tropics.



Neobenthamia gracilis
– showing growth and
flowering habit



Neobenthamia gracilis
– note branched
growths that
form roots and
become keikies

Interestingly, this orchid was recently reclassified as *Polystachya neobenthamia*, but this has not been greeted with much acceptance in the broader botanical and horticultural communities. Too often the primary focus is only on the floral characters, with growth habits, features and structure completely disregarded. This is the current situation with *Dendrobium*. I am all for thorough DNA analysis, but also strongly support taxonomy and nomenclatural determinations based equally on consistent floral and vegetative characters. ■

David Banks

Seven Hills, NSW

Email: david@hillsdistrictorchids.com



Neobenthamia gracilis
– flower detail

From Little Things Big Things Grow

Text and photos by Alan W. Stephenson OAM

From my formative orchid years and to this date 35 years later and particularly following the introduction of digital photography, I have always been keen to see new things in our environment. Most of these of course have been orchids but as orchids are not the only natural things to see in the wild I have never shied from the opportunity to photographically record anything new or different. As even in my early days I realised what I may have witnessed may be something new and I have been pleased to see several new orchid species. Most of course have been new to me but some have proved new to the Shoalhaven Region are where I live and even a couple new to science, which has been the most pleasing aspect of my off-track expeditions.

I am fortunate to live in a part of New South Wales which has a variety of landscape forms and together these form habitats in which 142 plus orchid species occur. These habitats consist of grassland, heathland, wet forest, dry forest, estuaries, sand dunes and rainforest, with numerous rock shelves thrown in for good measure. Only 18 of our orchid species can be seen on rocks or trees as all others are ground dwelling terrestrials with one actually being under the soil or leaf litter and that is *Rhizanthella slateri*, the Eastern Underground Orchid. Some species are abundant, while others are extremely limited such as *R. slateri* and it has been located on just two sites in the Shoalhaven and both at low altitudes of 15 metres or lower.

During the time I have been involved with orchids I have encountered two which have become my favourites. One is *Thelychiton speciosus* (syn *Dendrobium speciosum*) and the other is *Sarcochilus falcatus*. One is a large plant which can cover many metres of rock shelf, while the other is generally limited to trees, although an occasional plant will be found on a rock. This is another reason to keep looking as many *Thelychiton speciosus* are located on trees in this area and as such these are known as *Thelychiton epiphyticus*. None of these can in any way be referred to as the Sydney Rock Lily, a

term which make me cringe as this plant never was and never should be classed as a lily. This is yet another reason to refuse 19th Century botany and pay heed to our own hard working and very knowledgeable Australian Botanists.

In most of the rainforest areas of the Shoalhaven *Sarcochilus falcatus* is abundant and as the mountains immediately to the north of Nowra are at 700mts. As I look from my kitchen window frequently and see clouds moving from west to east and of course this is the habitat for many orchids including *Sarcochilus falcatus* and also *Plectorrhiza tridentata* and *Dockrillia pugioniformis* (Dagger Orchid).



Sarcochilus falcatus
– Shoalhaven form

One of these dagger orchids measured 50cm and sat above two plants of *Sarcochilus falcatus* until a council employee mulched the small tree and destroyed all three plants in the haste to provide a trouble-free access to a track which was used by two or three vehicles per week. Needless to say, this was the largest plant of its type I have seen. Quite near these plants is a tree with at least 29 seedlings of *Sarcochilus falcatus* and I only hope to live long enough to see this population in flower as I can visualise a stunning display when that occurs. Other trees along this track also host numerous plants of *Sarcochilus falcatus* and as the conditions are perfect for the species this will be yet another true natural spectacle. Fortunately, this is not the only tree full of seedlings as just further along this road is another similarly laden tree and at least neither section of habitat is marked for development, so I expect all plants are reasonably safe from destruction. A friend and I visited that area two years ago to check other species and we measured a flower of *Sarcochilus falcatus* at 37mm across. However, after leaving the dense rainforest we saw another plant which measured 43mm across and at least I have a witness to that fact.

Alan W. Stephenson OAM
Nowra, NSW
Email: affine@tpg.com.au



Sarcochilus falcatus
- Shoalhaven form,
colony of plants



Sarcochilus falcatus
- young seedlings,
note healthy root systems



Sarcochilus falcatus
- young seedlings
amongst epiphytic
mountain moss

Environmental Concerns

Text and photos by Alan W. Stephenson OAM

Any person watching television news during the first week of July 2019 may have been aware of the environmental issues raised during that week. I only watch ABC News as I am convinced it provides the only honest reflection and comments on this critical issue.

Matters raised have mainly been regarding land clearing and of course the resulting habitat destruction. Of course, my concerns are directly relative to orchids and their habitats and includes terrestrial, epiphytic and lithophytic orchids and while these are my main concerns, we must consider the large number of ground and tree dwelling animals which rely on a stable environment for their survival as this is the source of their food and a place to live. It goes without saying their main issue feature the cute, cuddly and furry creatures and only occasionally the wriggly venomous reptiles. Orchids do not rate a second look or thought and in particular the deciduous terrestrial types as unseen is akin to non-existing.

The other matter is the annual so-called hazard reduction burning, undertaken to protect residential premises, constructed after some form of legal habitat destruction. This can take several forms and one is Private Native Forestry (PNF) I have personal issues with this legislation and have wasted several hours, either on a site adjacent to this action and also in the Office of Environment and Heritage headquarters in Sydney but realised I was wasting my time as that is a legal act and cannot or will not be changed. It allows for any landowner to clear a property without a check for endangered flora or fauna and if such is located during the operation, there is no legal requirement to record or protect said species. This information was expressed by their lawyers and in recent years has been made worse. This came about with the introduction of the Biodiversity Conservation Legislation a few years ago and I should not need to point to any particular person or political party to blame. This legislation meant that habitat clearing could be undertaken without any reference to a suitably qualified person, which of course is open slather for those not environmentally concerned.

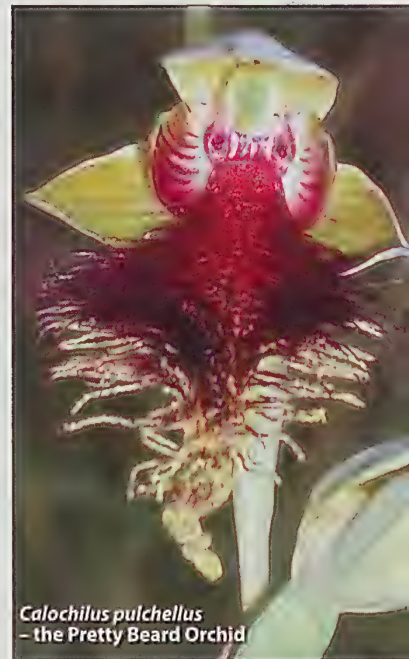
A few years ago, another matter came to light and it also concerned the already weak NSW conservation act.

When a development of any type is planned, the GPS point of that development was entered into the then NSW Bio-Atlas, which then highlighted all threatened flora and fauna within a 10km radius. Most assessment people use a 5km radius and I am almost comfortable with that but the legislation also states, there is only an expectation, not a requirement, all such flora and fauna will be subject to a survey. Again, this is legalised destruction and does not sit well with persons such as myself.

And just when you think things could not be worse, one of the Newsworthy points made this week was the obvious diminution of the National Parks & Wildlife Service (NPWS). This organisation was instituted in 1967 and despite 2017 being the 50th anniversary of its founding, no official recognition or celebration was announced. I have a close friend who became a NPWS Ranger in that founding year and later became a district manager and he was more than disappointed as the downgrading of that office.

I know that the central NPWS office in Nowra is closed to the public and the West Nowra works depot suffers from reduced staff as I am at times a regular visitor and occasional voluntary consultant to that office. The most recent Area Manager recently retired but I know his retirement was not voluntary.

In recognition of the lack of environmental authority in NSW and also at Federal level I have been trying for two years to arrange a meeting with the NSW Environment Minister but so far without success, although a recent letter may produce a result of some type. To further highlight the federal issue, in late 2015 I wrote yet another submission to have an orchid listed as endangered. This was *Calochilus pulchellus* (Pretty Beard Orchid) and despite only 30 plants being known to exist and all in the Shoalhaven, this species failed to rate high enough to rate on their scale to be considered at that time. Several phone calls later to the EPBC Office indicated any decision regarding this species will most likely be announced in September 2019, just four years after my submission. It is listed



Calochilus pulchellus
– the Pretty Beard Orchid



Firewood pile

under NSW legislation because I wrote that submission but as NSW legislation has many escape clauses, I considered a federal listing was the only avenue. I was desperate as the area in which it was last seen is marked for residential development.

It only came to my notice when a young man I know was undertaking an environmental assessment, discovered the plant and sent me a photo to identify in October 2014. As I knew the chap and considered him honest, I identified the plant as the endangered species. He then informed his employer who informed the client and the knowledge was dismissed as they had been told something they did not want to know as a developer. However, through my most likely unlawful undercover means the local council and OEHL were both informed and the matter became more public. Sometimes it pays to have a close association with some in authority. To date no development approval has been granted and so far the plant is secure but no further surveys have been undertaken to determine the number or extent of this species and of course I await notification of any federal listing of the status of this species. I have a special interest in this species as it was my accidental discovery almost two decades ago which led to its naming as it was up until that time known as *Calochilus* sp. aff. *grandiflorus* and I need to thank modern-day Australian scientists for their recognition. I am sure if it was left to those in a foreign country the name would have remained unchanged and the species not recognised.

Despite no longer being the official conservation person for the two national orchid bodies (AOC & ANOS), be assured if and when *Calochilus pulchellus* receives its due recognition, you will hear my screams of pleasure and satisfaction at all points of the compass. As it will probably be the last environmental blow I will strike as sadly I know there is not another

person involved in orchid conservation who has even considered ruffling a few feathers. Also, with the loss of official NPWS and OEHL personnel the cry for citizen science has become more vocal from official sources. This simply means governments are quite content to rely on unpaid, unqualified but keen members of orchid societies to complete and conduct their work, which of course comes at no cost to such governments. It is also discouraging to be witness to the complete lack of leadership or concern from official orchid circles and I have been at the forefront of such lack of actions and concerns.

Alan W. Stephenson OAM
Nowra, NSW
Email: affine@tpg.com.au






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Characterisation of *Diplodidium revolutum* (R.Br.) D.L.Jones & M.A.Clem. and the description of Two New Similar Species

by David L. Jones

Abstract

Diplodidium revolutum (R.Br.) D.L.Jones & M.A.Clem. is characterised in the strict sense and the related and/or morphologically similar taxa, *Diplodidium ampliatus* and *Diplodidium venustum* are here described as new.

Key Words

Orchidaceae, *Diplodidium ampliatus*, *Diplodidium revolutum*, *Diplodidium venustum*, *Pterostylis revoluta*, *Pterostylis speciosa*, new species, Victoria, South Australia, New South Wales, Queensland, Australian flora.

Introduction

Diplodidium revolutum (R.Br.) D.L.Jones & M.A.Clem., which has been usually accepted as a common species that is widely distributed on the mainland of south-eastern Australia, is characterised in the strict sense and two morphologically similar species are here described as new.

Materials and Methods

Descriptions of the new taxa were made from fresh specimens. Unless otherwise indicated, all types of *Pterostylis* relevant to this study (or photographs thereof), and collections cited either as *Pterostylis* or *Diplodidium*, have been seen by me.

Taxonomy

1. *Diplodidium revolutum* (R.Br.) D.L.Jones & M.A.Clem.

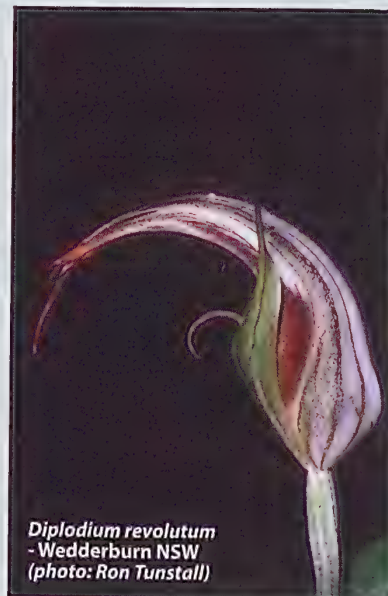
Pterostylis revoluta R.Br. *Prod.* 327 (1810). Type: Port Jackson, 1803, R.Brown (lecto specimen (a) BM!).

Description: Leaves of sterile plants 3-9 per rosette; lamina ovate, 6-20 mm long, 4-14 mm wide, grey green to bluish, margins entire; petioles narrow, 0-10 mm long. Inflorescence 100-150 mm tall, 1(-2)-flowered, thin, wiry, smooth. Stem leaves 3-5, stem-clasping, narrowly lanceolate when flattened, 7-14 mm long, 2-3.5 mm wide, acuminate. Ovary narrowly ellipsoid, 5-6 mm long, 2.5-3 mm wide, smooth. Flower leaning forwards, 24-29 mm long, 9-12 mm wide, translucent white with pale green stripes and suffusions, apex fawn to light brown. Galea shallowly curved at the base then straight before sweeping forwards in a long shallow sickle-shaped curve, the tip sometimes decurved. Dorsal sepal 40-45 mm long, 13-15 mm wide when flattened, bulbous at the base then tapered to the apex; apical point filamentous, 5-8 mm long. Lateral sepals closely embracing the petal

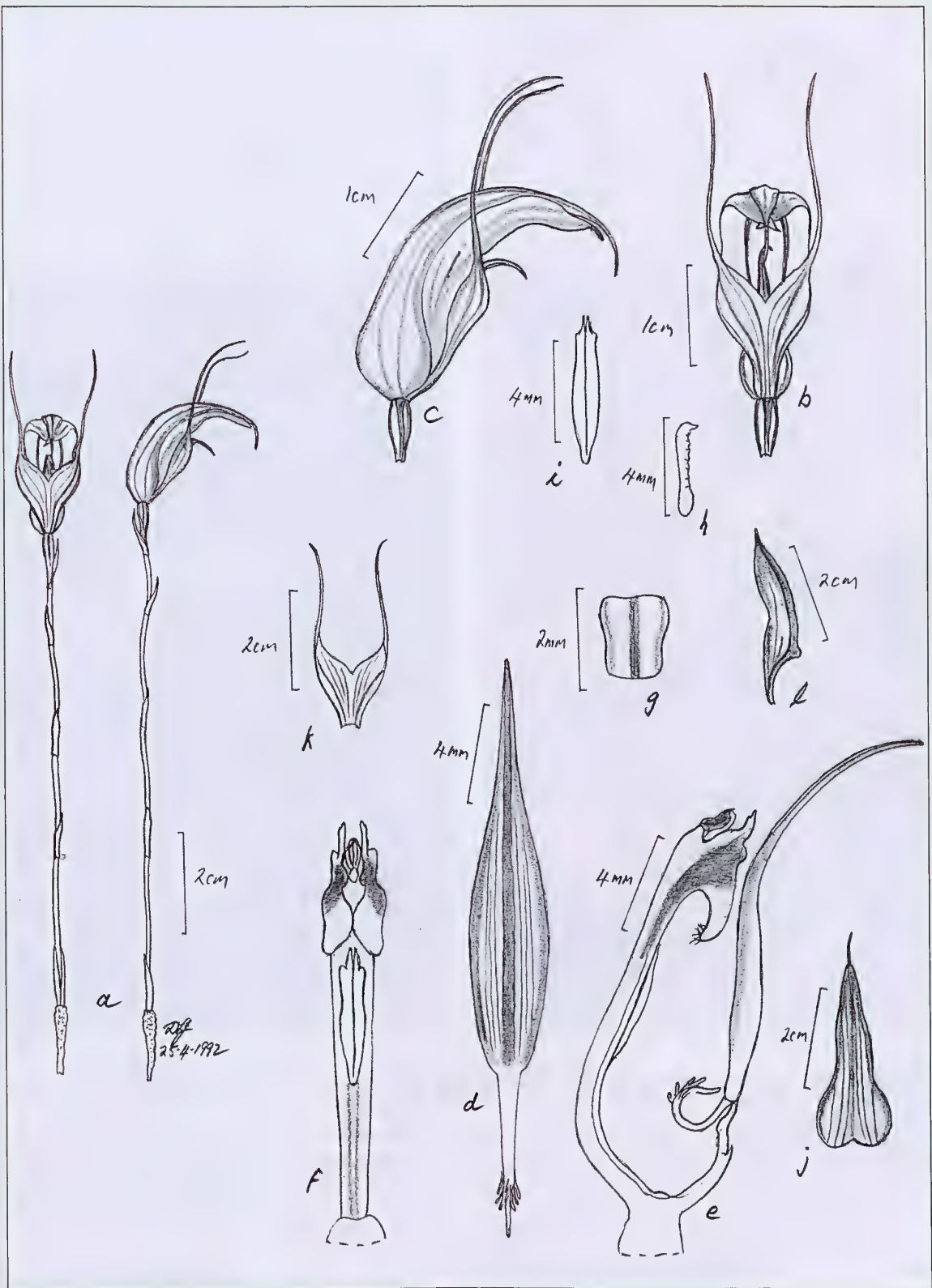
margins, 35-40 mm long; in side view more or less straight then shallowly curved in at the sinus; deeply and broadly V-shaped in frontal view; fused basal part c. 10-12 mm long, 14-15 mm wide at the widest point; free points filamentous, 25-30 mm long, more or less parallel, erect and curved forwards. Petals oblong-lanceolate, more or less straight, 32-35 mm long, 6-7 mm across, apex acute to shortly acuminate. Labellum hinge c. 16 mm long, c. 13 mm wide. Labellum erect in the proximal half then curved forwards, ca. one-third protruding from the flower in the set position. Labellum lamina narrowly elliptical, 14-16 mm long, 3-3.5 mm wide, white with green lines and a dark median ridge, tapered in the distal half to a long acuminate point. Basal appendage 5-7 mm long, incurved, linear-tapered with a penicillate apex. Column 15-16 mm long, white with a green area on the column wings; column wings c. 6 mm long. Anther c. 1.5 mm long, dark green, erostate. Pollinia narrowly linear, c. 2 mm long, yellow. Stigma narrowly scutiform, c. 6 mm long, c. 1 mm wide. Capsules ellipsoid, 6-8 mm long, 4-5 mm wide.

Distribution and ecology: Apparently confined to central areas of coastal NSW more or less between Newcastle and Nowra: 10-150 m alt. Localised, growing in coastal scrub and heathy forest on stabilised dunes and sandy flats in freely draining sand and sandy loam. Flowering period: February to June.

Recognition: Late summer-early winter flowering species with moderately large, forward-leaning flowers which are white and green with fawn to brown or red-brown markings, the flower overall sickle-shaped with a relatively long shallowly curved frontal opening and a sharply tapered, curved, pointed labellum that protrudes prominently from the sinus in the set position.



Diplodidium revolutum
- Wedderburn NSW
(photo: Ron Tunstall)



***Diplodinium revolutum*, Kurnell, NSW, T. Bishop (J199/26-29)**

a. flowering plants; b. flower from front; c. flower from side; d. labellum; e. column and labellum from side; f. column from front; g. labellum hinge; h. pollinium; i. stigma; j. dorsal sepal; k. synsepalum; l. petal.

© D.L.Jones, drawn 25 April 1992.



Robert Brown's type collection of *Pterostylis revoluta* held at the British Museum

Notes: The type specimens of *Pterostylis revoluta* were collected by the Scottish botanist Robert Brown in 1803 from Port Jackson, the historical name applied by Captain James Cook to Sydney Harbour. In 1989 Mark Clements designated a specimen of Brown's collection at the British Museum as the lectotype with collections at other herbaria, viz. AD, BM, Fl, K, P, W, designated as isoelectotypes (Clements 1989). The exact location of Brown's collections within the Sydney region is unknown but a syntype collection in 1805 listed as "Port Jackson, Parramatta" provides one locality.

A study of the type collection of *Pterostylis revoluta* shows that it is a relatively small-flowered species that for some reason has been equated with much larger-flowered taxa found mainly in inland regions. Because of this mistaken identity it is erroneously included in the floras of most states in south-eastern Australia. However, field work and examination of herbarium specimens reveals that it is apparently confined to central areas of coastal NSW. Bishop (1996) gives a distribution of "mainly coastal areas between southern Sydney and Nowra, possibly Hunter Valley". It is uncommonly collected and was probably much more common in the early 1800's when Robert Brown was collecting around Sydney Harbour.

Pterostylis revoluta was placed in the genus *Diplodinium* in 2002 (Jones & Clements 2002).

2. *Diplodinium ampliatus* D.L.Jones, sp. nov. With affinity to *Diplodinium revolutum* (R.Br.) D.L.Jones & M.A.Clem., but differing by its larger flowers with a broader base, longer drawn-out apex on the galea, longer free points on the lateral sepals (40-50 mm long cf. 25-30 mm in *D. revolutum*), longer petals (42-47 long cf. 32-35 mm in *D. revolutum*) with an acuminate to long-acuminate apex (acute to shortly acuminate in *D. revolutum*) and a longer labellum (20-24 mm long cf. 14-16 mm in *D. revolutum*).

Type: New South Wales. Central Western Slopes; Conimbla National Park, behind picnic area, 15 April 1989, D.L.Jones 3097 et al. (holo CBG 8912709, iso AD, MEL, PERTH).

Description: Leaves of sterile plants 4-11 per rosette; lamina ovate, 10-25 mm long, 4-18 mm wide, dull green, margins entire; petioles narrow, 1-15 mm long. Inflorescence 100-200 mm tall, 1(-2)-flowered, thin, wiry, smooth. Stem leaves 3-5, stem-clasping or more usually spreading, narrowly lanceolate when flattened, 10-35 mm long, 3.5-5 mm wide, acuminate. Ovary narrowly ellipsoid, 9-13 mm long, 3-4 mm wide, smooth. Flower usually leaning forwards, 35-40 mm long, 15-18 mm wide, translucent white with pale green stripes and suffusions, apex fawn to light brown (occasionally reddish brown). Galea shallowly curved at the base then more or less straight before sweeping forwards in a long shallow sickle-shaped curve. Dorsal sepal 70-80 mm long, 16-20 mm wide when flattened, bulbous at the base then tapered to the apex; apical point filamentous, 8-15 mm long. Lateral sepals closely embracing the petal margins, 45-65 mm long; in side view shallowly curved, then curving in at the sinus; deeply and broadly V-shaped in frontal view; fused basal part of synsepalum c. 12-16 mm long, 13-18 mm wide at the widest point; free points filamentous, 40-50 mm long, more or less parallel, erect and curved forwards or recurved. Petals oblong-lanceolate, strongly falcate, 42-47 mm long, 6-8 mm across, apex long-acuminate. Labellum hinge c. 20 mm long, c. 16 mm wide. Labellum erect in the proximal half then curved forwards, ca. one-third protruding from the flower in the set position. Labellum lamina narrowly elliptical in the basal third to half, 20-24 mm long, 3-4 mm wide, white with green to reddish-brown lines and a dark median ridge (sometimes wholly reddish distally), tapered evenly in the distal half to two-thirds to a long acuminate point. Basal appendage 4-7 mm long, c. 0.8 mm across, incurved, linear-tapered with a penicillate apex. Column 15-18 mm long, white with a green or brown area on the column wings; column wings 5-6 mm long. Anther c. 1.5 mm long, dark green, erostate. Pollinia narrowly linear, c. 2.3 mm long, yellow. Stigma narrowly elliptic, c. 7 mm long, c. 1.5 mm wide. Capsules ellipsoid, 9-12 mm long, 4-6 mm wide.

Distribution and ecology: Distributed from the Carnarvon Range and Mt Moffat in central Qld south through the Darling Downs and much of western NSW, at least as far west as Griffith, into Victoria where widely distributed, extending west about as far as the Grampians. It grows on ridges, slopes and flats in drier forests often with a sparse understorey, including box-ironbark forests and *Callitris* woodland in freely draining gravels, sands and clay loams; also in sparse vegetation among rocks and on sandstone outcrops in shallow skeletal soils. Flowering: March to June.

Recognition: Late summer-winter flowering species with large, forward-leaning (usually), green, white and brown flowers with a long sickle-shaped hood drawn out into a long slender apex, V-shaped frontal opening and a long, sharply pointed, protruding labellum.

Similar species: This species, which has been confused with *D. revolutum* because of its general overall floral similarity, is prominent in inland areas. It is distinguished from *D. revolutum sens. strict.* by its larger flowers with a broader base, longer, drawn-out apex on the galea, longer free points on the lateral sepals (40-50 mm long cf. 25-30 mm in *D. revolutum*), longer petals (42-47 mm long cf. 32-35 mm in *D. revolutum*) with an acuminate to long-acuminate apex (acute to shortly acuminate in *D. revolutum*) and a longer labellum (20-24 mm long cf. 14-16 mm in *D. revolutum*).

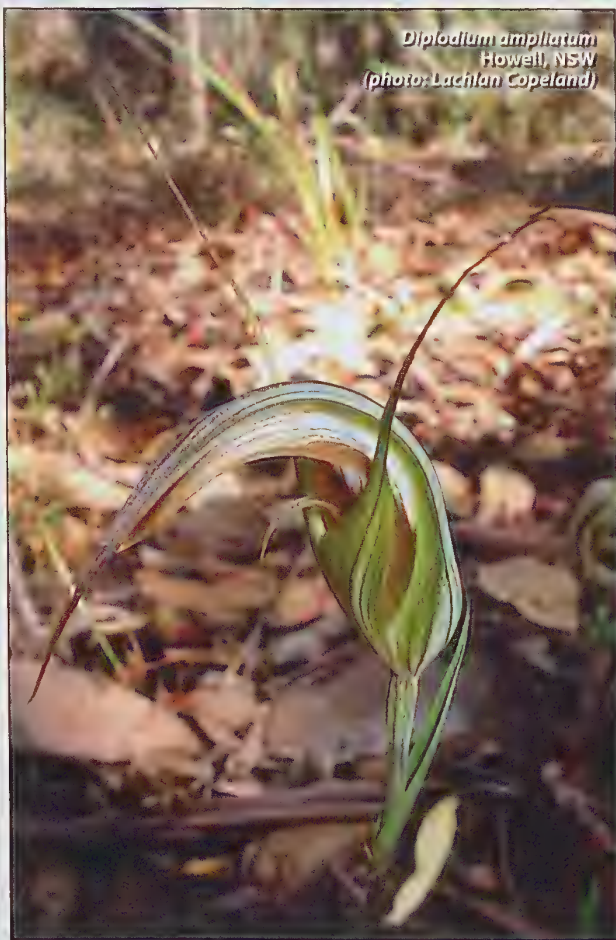
Notes: This species, also known as *Pterostylis* sp. aff. *revoluta* (Inland), (Bishop 1996), has been wrongly linked with *Pterostylis revoluta* for more than 150 years.

Conservation status: Widely distributed, common and well conserved.

Etymology: The Latin *ampliatum*, enlarged, increased, in reference to the larger flowers when compared with those of *Diplodinium revolutum*.



Diplodium ampliatum
Howell, NSW
(photo: Lachlan Copeland)



Diplodium ampliatum
Howell, NSW
(photo: Lachlan Copeland)

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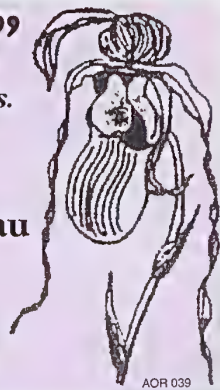
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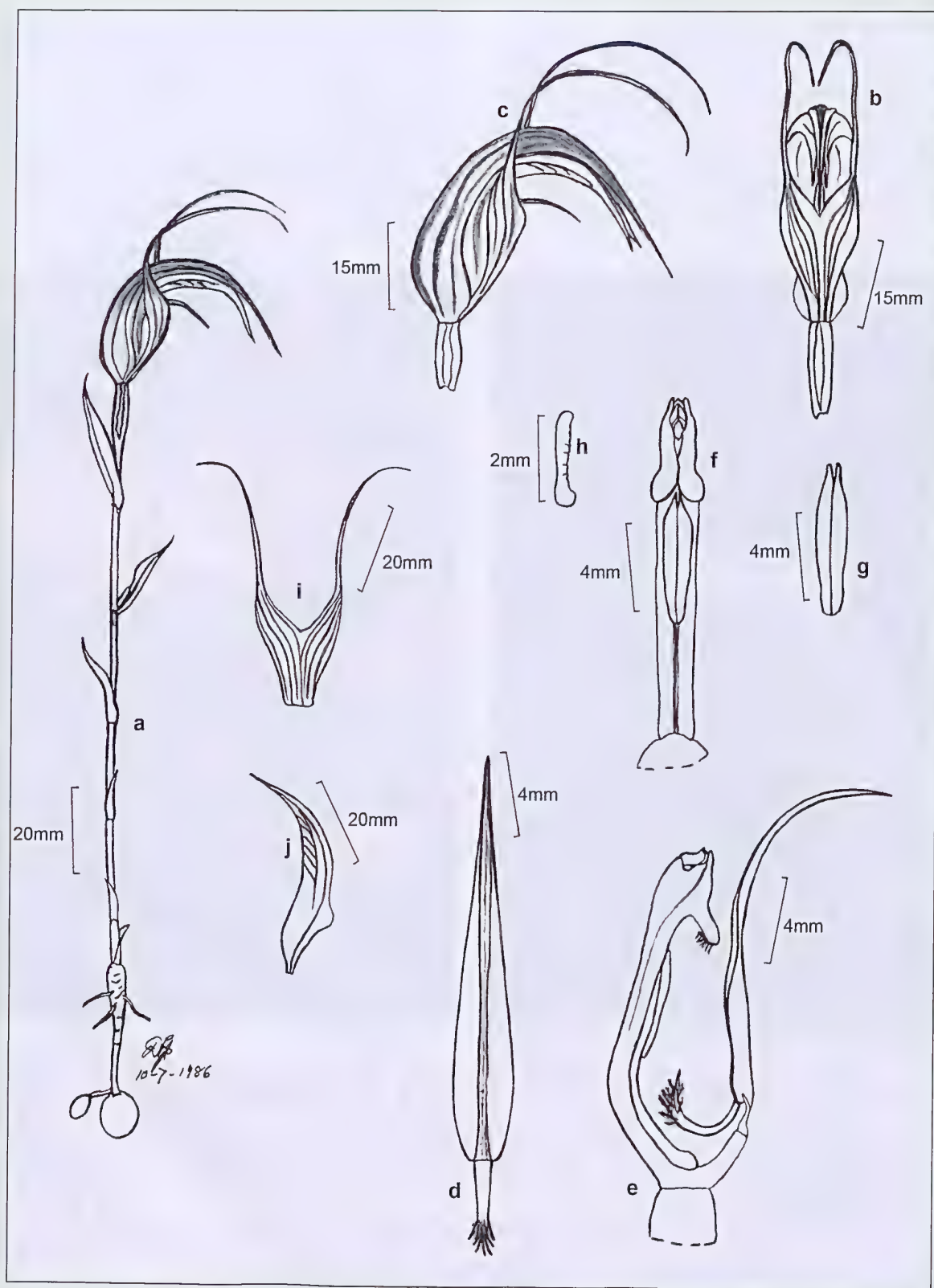
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***Diploidium ampliatus*, Galore Hill, NSW, M.Clements (MAC4068)**

* a. flowering plant; b. flower from front; c. flower from side; d. labellum; e. column and labellum from side; f. column from front; g. stigma; h. pollinium; i. synsepalum; j. petal.

© D.L.Jones, drawn 10 July 1986.

3. *Diplodium venustum* D.L.Jones, *sp. nov.* With affinity to *Diplodium revolutum* (R.Br.) D.L.Jones & M.A.Clem. but differing by its much larger upright flowers (usually leaning forwards in *D. revolutum*) which is distinctly bulbous at the base (base thin and narrow in *D. revolutum*) with a broad inflated galea (relatively narrow sickle-shaped galea in *D. revolutum*), larger bulbous dorsal sepal which tapers to an acuminate apex (narrow dorsal sepal with a filiform point in *D. revolutum*), longer free points on the lateral sepals (40-50 mm long cf. 25-30 mm in *D. revolutum*), larger petals and a larger, much broader labellum (16-18 x 4.5-5 mm cf. 14-16 x 3-3.5 mm in *D. revolutum*) that tapers evenly from below the middle to the subacute apex (suddenly tapered from near the middle in *D. revolutum* to a long-acuminate apex). Additionally the labellum apex of *D. venustum* is scabrous whereas that of *D. revolutum* is smooth.

Type: Queensland. Wide Bay district: Fraser Island, 20 May 1999, R.Crane 2097 (holo CANB 665687; iso BRI).

Description: Leaves of sterile plants 3-5 per rosette; lamina ovate, 8-17 mm long, 7-10 mm wide, green, margins entire; petioles narrow, 4-9 mm long. Inflorescence 150-250 mm tall, 1-(2)-flowered, wiry, smooth. Stem leaves 5, spreading, base amplexicaul, lanceolate, 30-60 mm long, 8-12 mm wide, margins entire or wavy, apex acute to acuminate. Ovary narrowly ellipsoid, 9-13 mm long, 3-4 mm wide, smooth. Flower erect, 40-45 mm long, 18-20 mm wide, translucent white with green and brown stripes and suffusions. Galea humped at the base then more or less straight before sweeping forwards in an obliquely erect sickle-shaped curve. Dorsal sepal 55-65 mm long, 20-25 mm wide when flattened, bulbous at the base then tapered to the apex; apical point narrowly tapered to acuminate. Lateral sepals closely embracing the petal margins, 55-65 mm long; in side view nearly flat then curved in at the sinus; deeply and broadly V-shaped in frontal view; fused basal part of synsepalum 15-18 mm long, c. 20 mm wide at the widest point; free points tapered at the base then filamentous, 40-50 mm long, more or less parallel, erect. Petals oblong-lanceolate, nearly straight, 40-47 mm long, 6-8 mm across, apex acute. Labellum hinge c. 25 mm long, c. 14 mm wide. Labellum erect in the proximal two-thirds then curved forwards, ca. one-quarter protruding from the flower in the set position. Labellum lamina elliptical-lanceolate, 16-18 mm long, 4.5-5 mm wide, white with green or reddish-brown lines and a dark median ridge, tapered in the distal half to two-thirds to a subacute point, distal surfaces scabrous. Basal appendage 5-6 mm long, c. 1 mm wide, shallowly incurved, linear-tapered with a penicillate apex. Column 17-18 mm long, white with a green or brown area on the column wings; column wings c. 7 mm long. Anther c. 1.7 mm long, dark green, erostate. Pollinia narrowly linear, c. 2.5 mm long, yellow. Stigma narrowly scutiform, c. 7 mm long, c. 1.3 mm wide. Capsules not seen.

Distribution and ecology: Apparently confined to coastal parts of the Wide Bay and Moreton Districts of south-eastern Qld between Fraser Island and North Stradbroke Island. It grows among shrubs and grass in open coastal forest with a relatively sparse understorey in freely draining sands. Flowering: April-June.

Recognition: Autumn-winter flowering species with large, upright, white, green and brown bulbous flowers with an obliquely erect galea long, bulbous dorsal sepal with an acuminate apex, broadly V-shaped frontal opening and a long, tapered, sharply pointed, protruding labellum.

Similar species: This species has been generally treated as a synonym of *Diplodium revolutum* more or less since it was named as *Pterostylis speciosa* by Queensland botanist Trevor E. Hunt in 1958. It is however readily distinguished from *D. revolutum sens. strict.* by upright (usually leaning forwards in *D. revolutum*) much larger flowers which are distinctly bulbous at the base (base thin and narrow in *D. revolutum*) with an inflated galea (narrow sickle-shaped galea in *D. revolutum*), larger bulbous dorsal sepal which tapers to an acuminate apex (narrow dorsal sepal with a filiform point in *D. revolutum*), longer free points on the lateral sepals (40-50 mm long cf. 25-30 mm in *D. revolutum*), larger petals and a larger, much broader labellum (16-18 x 4.5-5 mm cf. 14-16 x 3-3.5 mm in *D. revolutum*) that tapers from below the middle to the subacute apex (suddenly tapered from near the middle in *D. revolutum* to a long-acuminate apex). Additionally the labellum apex of *D. venustum* is scabrous whereas that of *D. revolutum* is smooth.

Notes: The Queensland botanist Trevor Hunt originally described this species in 1958 as *Pterostylis speciosa* based on specimens he collected between Dunwich and Myora on Stradbroke Island in Moreton Bay, south-eastern Queensland (Hunt 1958). The epithet '*speciosa*' was already occupied in *Pterostylis* by a New Zealand species described by William Colenso in 1890, hence the new name for the taxon.

Conservation status: Poorly collected but conserved in Fraser Island National Park and possibly also in Myora Conservation Park on North Stradbroke Island.

Etymology: The Latin *venustum*, beautiful, graceful, maintaining the theme originally applied to the species by Trevor Hunt in 1958.

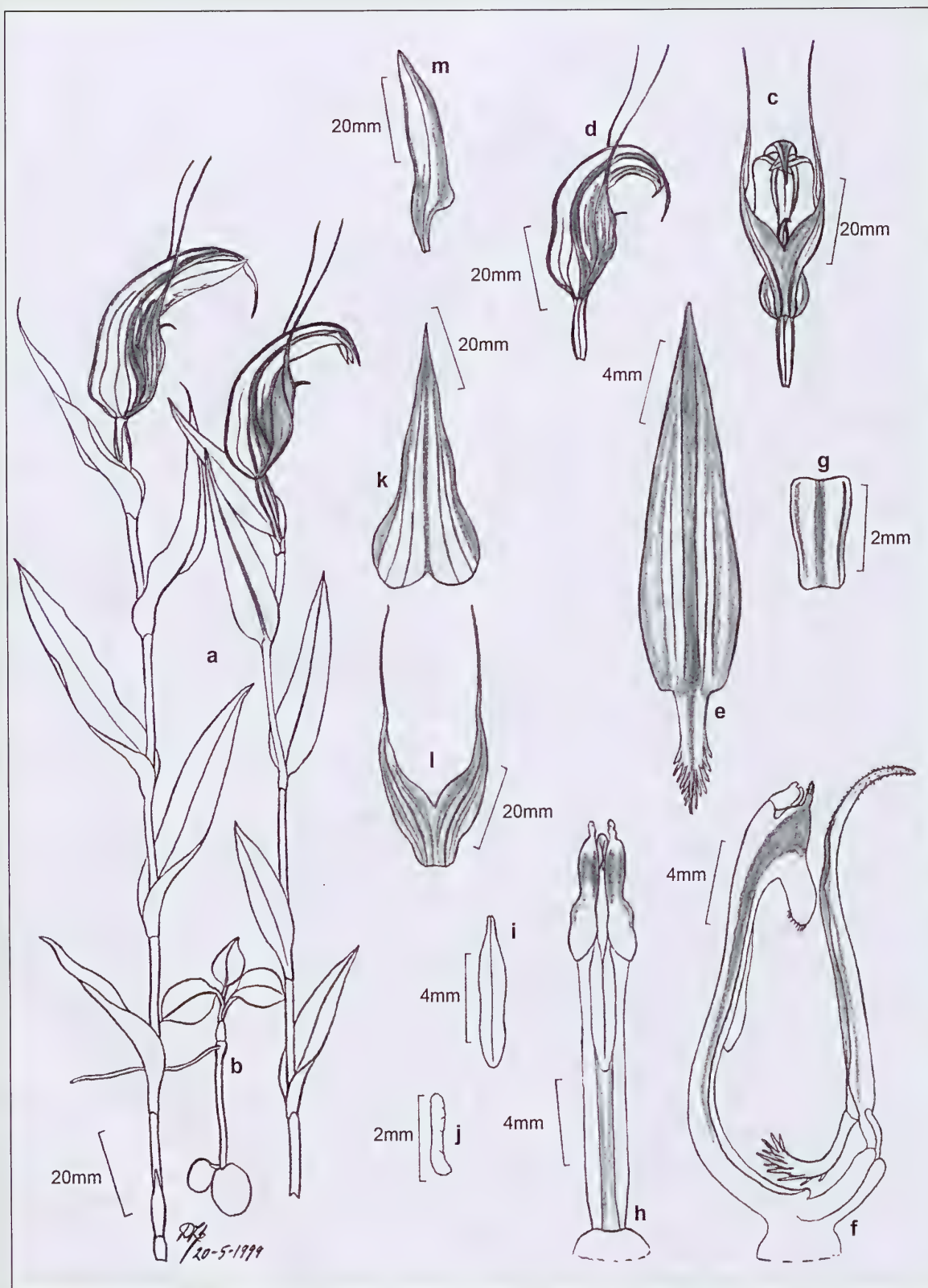
Acknowledgements

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David L. Jones
Kalaru, NSW, 2550
Email: dabajones@bigpond.com



***Diplodinium venustum*, Fraser Island, Queensland, R. Crane (RC. 2097)**

a. flowering plants; b. rosette; c. flower from front; d. flower from side; e. labellum; f. column and labellum from side; g. labellum hinge; h. column from front; i. stigma; j. pollinium; k. dorsal sepal; l. synsepalum; m. petal.

© D.L.Jones, drawn 20 May 1999.

Danhatchia copelandii (Orchidaceae: Goodyerinae), a newly discovered species of leafless orchid from northern New South Wales

by David L. Jones and Mark A. Clements

Abstract

Danhatchia copelandii, which is described here as new, is compared with the recently described Australian species *Danhatchia novaehollandiae* D.L.Jones & M.A.Clem. and the New Zealand species, *Danhatchia australis* (Hatch) Garay & Christenson, on which the genus is based. Notes are provided on its distribution, habitat, etymology and conservation status.

Key Words

Orchidaceae, *Danhatchia australis*, *Danhatchia copelandii*, *Danhatchia novaehollandiae*, new species, New South Wales, Australian flora.

Introduction

Danhatchia, previously known only from New Zealand, is a recently recognised new genus to be added to the Australian orchid flora (Banks 2012). The native species was recognised as morphologically distinct from the New Zealand species (*Danhatchia australis*) and named *Danhatchia novaehollandiae* (Jones & Clements 2018). Its botanical history and relationships to *Danhatchia australis* were detailed in that paper. *Danhatchia novaehollandiae* is known from two sites on the Comboyne Plateau on the Mid North Coast of New South Wales and near Bundanoon in the Southern Highlands of the same state. Further field work has located a further two populations of *Danhatchia* in eastern Australia, one an isolated population of a small-flowered species found by environmentalist Duncan Fowler in Lamington National Park in south-eastern Queensland and the other a remarkable new species with widely opening flowers discovered by Lachlan Copeland near Coffs Harbour on the north coast of New South Wales. The latter species is described here as new.

Taxonomy

1. *Danhatchia copelandii* D.L.Jones & M.A.Clem., *sp. nov.*
With affinity to *Danhatchia novaehollandiae* D.L.Jones & M.A.Clem. but differing by its more widely spaced, larger, widely opening colourful flowers (relatively crowded, smaller, dull-coloured, cleistogamous flowers in *D. novaehollandiae*) and a yellow and white labellum with a prominent orange-yellow domed callus (pale labellum with a very obscure callus in *D. novaehollandiae*); also with *D. australis* (Hatch) Garay & Christenson which has similar sized flowers to those of *D. copelandii* but which do not open as freely and have a narrower paler labellum with strongly incurved labellum margins and a flatter obscure paler callus.



Danhatchia copelandii
Bonville, NSW,
plant in bloom
(photo: L.M. Copeland)

TYPE: New South Wales: North Coast: Private property c. 2.5 km due NW of Bonville Post Office (exact locality withheld for conservation purposes), 29 Oct. 2018, L.M. Copeland 4550 (holo CANB, iso NE, NSW).

Description: Leafless, terrestrial, mycoheterotrophic, rhizomatous herb. Rhizome subterranean, creeping, branching, brittle. Stems erect, 100-200 mm tall, c. 2 mm thick, fleshy, reddish brown, glandular hairy. Sterile bracts 4-5, closely sheathing, elliptical when flattened, whitish with five darker veins, 13-20 mm long, c. 4 mm across, apex acuminate. Raceme 35-65 mm long, 2-6-flowered. Fertile bracts closely sheathing the proximal part of the ovary, elliptical when flattened, 4-6 mm long, c. 3 mm wide, hyaline, three main veins prominent, accessory veins fainter, apex acuminate. Pedicels 0-1 mm long. Ovaries erect, appressed to rachis, 4-6 mm long, turgid, glandular hairy. Flowers 5-5.5 mm long, 6.5-7.5 mm across, opening freely, brown externally, white to whitish internally, labellum yellow and white with prominent orange-yellow callus. Dorsal sepal porrect, cucullate over labellum, oblong-obovate when flattened, 4.5-5 mm long, c. 1.5 mm across, brown externally with whitish distal margins, dark median stripe and marginal stripes visible, apex upturned, obtuse. Lateral sepals spreading, well separated from labellum, oblong-elliptical and shallowly falcate when flattened, 5-5.5 mm long, c. 2 mm across, asymmetric, margins incurved, whitish, apex obtuse. Petals mostly imbricate within sepals, narrowly linear-obovate and shallowly falcate when flattened, c. 5 mm long, c. 1 mm across, narrowed to base, asymmetric, cream with a pale brown median band, apex obtuse. Labellum sessile, porrect, margins strongly incurved, proximal margins partly enclosed within dorsal sepal, rectangular-obovate when flattened, c. 4.5 mm long, c. 4 mm wide, yellow with whitish margins; ventral lamina with central thickened ridge, and thickish margins, the distal two thirds occupied by a large orange-yellow somewhat domed callus; base saccate, with four groups of short acicular calli (often in pairs or threes); distal margins entire; apex broadly apiculate. Column well developed, c. 3.5 mm long, c. 1.5 mm across, white. Capsules not seen.

Distribution and ecology: Currently known only from a single population c. 15 km south-west of Coffs Harbour growing at an altitude of 70 m. The habitat is subtropical rainforest dominated by Maiden's Blush (*Sloanea australis*), Rusty Plum (*Niemeyera whitei*) and Bangalow Palms (*Archontophoenix cunninghamiana*). The orchid plants grow in dense leaf litter with no other ground layer plants present. The soil is a shallow clay loam derived from metasediments.

Flowering period: Flowering plants have only been observed in late October and early November. Some flowers lasted 7-10 days.

Recognition: *Danhatchia copelandii* is a slender hairy leafless orchid that can be recognised by its uncrowded freely opening colourful flowers (brown externally, whitish internally, labellum with prominent orange-yellow callus), the dorsal sepal porrect with an upturned apex, the lateral sepals spreading freely, the very narrow petals mostly hidden within the sepals, the yellow and white labellum porrect with strongly incurved margins and a prominent bright orange-yellow mounded callus on the anterior surface towards the apex.

Similar species: *Danhatchia novaehollandiae* is similar in general overall appearance but can be immediately distinguished by its smaller crowded flowers which do not open at all and with an obscure pale-coloured labellum callus. The new species also has affinities with *Danhatchia*



Danhatchia copelandii
Bonville, NSW,
showing flower and
developing seed capsule
(photo: L.M. Copeland)

australis which has flowers of a similar size that open sporadically but with broader sepals (c. 2.3-2.5 mm across) and much broader elliptical to obelliptical petals (c. 1.8-2 mm across), the labellum lacking the large colourful callus of *Danhatchia copelandii*.

Notes: The flowers of *Danhatchia copelandii* are quite colourful and open widely, the lateral sepals flanking the porrect labellum in a V-shaped arrangement. Floral dissection shows that the labellum contains an abundance of nectar indicating that the new species may be attractive to insects. By contrast the pale flowers of *Danhatchia novaehollandiae* are heavily suffused with brown, do not open at all, have a very obscure callus and contain no nectar.

Conservation Status: Currently known only from a single population of 24 plants spread across c. 0.5 ha of private land. Given it is known from less than 50 plants the species meets the requirements of Critically Endangered under the IUCN criteria. A ROTAP code of 1E would be appropriate following the criteria of Briggs and Leigh (1996). Similar suitable habitat for the orchid occurs nearby to its known location and in other sites on the North Coast suggesting that the species could be more common and widespread. Current threats are limited to the invasion of rainforest margins by weeds such as Lantana and Crofton Weed but the known orchid population occurs at least 20 m away from these within the rainforest canopy.

Etymology: Named in honour of Lachlan Mackenzie Copeland (1973-), enthusiastic botanist, ecologist and naturalist with a special interest in native orchids combined with a comprehensive knowledge of the flora and fauna of New South Wales. Lachlan spends a lot of time on field work and has a discerning eye with the discovery of many new species of native plants, including several orchids, to his credit.

Acknowledgements

Special thanks to Lachlan Copeland for bringing the species to our attention and David Banks, Duncan Fowler, John Riley and Alan Stephenson for discussions about *Danhatchia* and details of the habitats. Thanks also to Jean Egan for preparing David Jones' drawing for publication and Barbara Jones for reading the manuscript.

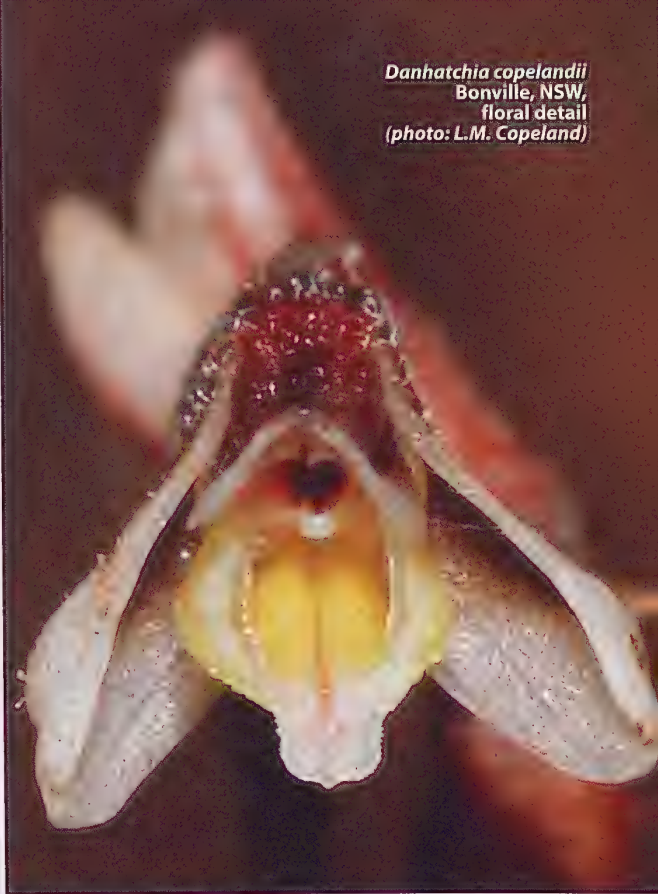
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- Jones, D.L. & Clements, M. A. (2018). *Danhatchia novaehollandiae* (Orchidaceae: Goodyerinae), a new species from south-eastern Australia, *Aust. Orchid Rev.* 83(4): 56-57.

David L. Jones
Kalaru, NSW 2550
email: dabajones@bigpond.com

Mark A. Clements
Centre for Australian National Biodiversity Research,
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Danhatchia copelandii
Bonville, NSW,
floral detail
(photo: L.M. Copeland)



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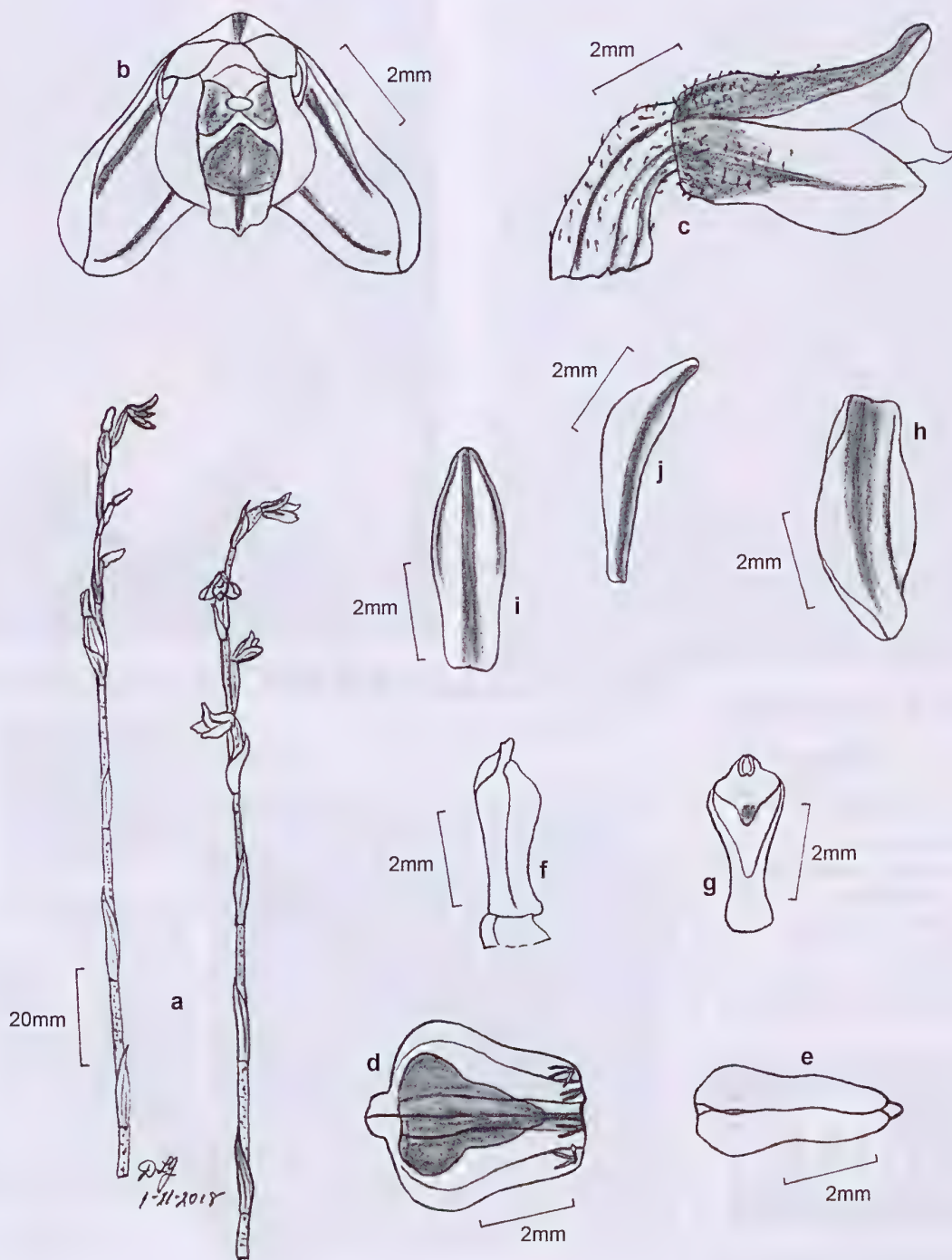
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***Danhatchia copelandii*, Bonville, NSW, L.M. Copeland.**

a. flowering plants; b. flower from front; c. flower from side; d. labellum from above, deflattened; e. labellum when finished; f. column from side; g. column from front; h. lateral sepal; i. dorsal sepal; j. petal.

Drawn from type: © David L. Jones 1st November 2018.

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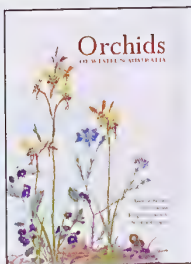
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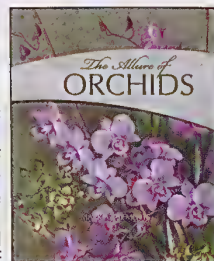
From 1788 when First Fleet artist George Raper painted *Diuris punctata*, the botanical world has been fascinated by Australian orchids. Hundreds of orchid images from the National Library of Australia's collection, with words by Mark Clements from the Australian National Herbarium in Canberra, make *The Allure of Orchids* a must-read for lovers of flowers, original paintings and our indigenous orchids. Many of these unique botanical illustrations are being showcased to a wider audience for the very first time.

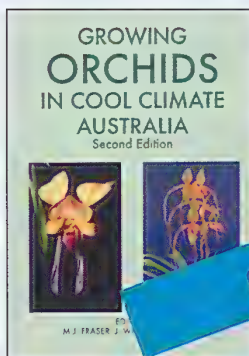
The Allure of Orchids features an essay by internationally recognised orchid expert Mark Clements, accompanied by a portfolio of illustrations, both historical and modern, of this alluring species. In it you will find works by around 25 artists, including the extraordinarily detailed lithographs of early botanical illustrator Ferdinand Bower, Ellis Rowan's beautiful paintings, the delicate watercolours of Margaret Cochrane Scott, and many more. *The Allure of Orchids* is divided into two parts: Terrestrial or ground orchids and Epiphytic or tree dwelling species. Clements says, "These illustrations can be enjoyed simply as works of art and part of our rich and colourful Australian illustrative heritage. But, significantly, they are also part of the scientific record of this country, particularly during the early exploration of the continent."

Interestingly, a lot of the old and traditional Latin botanical names have been used in this work. The author makes a significant number of anecdotal notes and comments throughout the book, to keep the reader fully informed. It is a "must have" book for those interested in Australian orchids and historical botanical art.

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GROWING ORCHIDS IN COOL CLIMATE AUSTRALIA

(Second Edition, 2013)

Editors: Fraser, M.J., Wright, J.,
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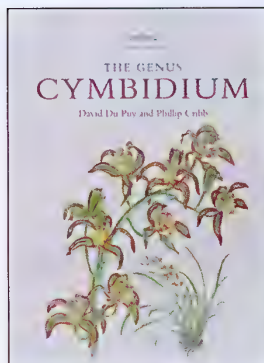
This is an updated book and includes much new information. Members of the Cool Climate Orchid Society. This book covers topics such as growing media, pests and diseases, Orchid terminology, Orchid Classification and of course how to grow many types of orchids in cool climate regions of Australia. The main section covers individual cultivation of the most popular types of

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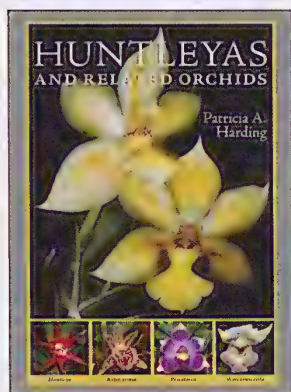
by David Du Puy
and Phillip Cribb

Second edition (2007). Full taxonomic accounts of all 52 species of *Cymbidium*, including distribution, maps, colour photographs, line drawings and colour paintings. Taxonomic key. Detailed conservation assessment of *Cymbidium*. Cultivation chapter and breeding chapters as well as chapters covering history, morphology, seed morphology, anatomy, cytology, pollination, uses and phylogeny.

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HUNTLEYS AND RELATED ORCHIDS

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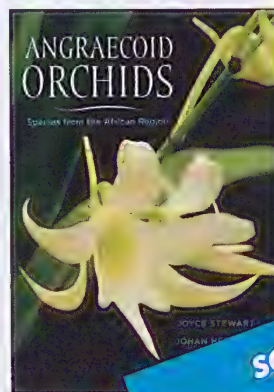
Revered by avid orchid collectors for its delightful, star-shaped flowers, *Huntleya* is a small group of orchids found low in the forest. *Huntleya* is a small orchid genus that includes fourteen species. They occur in wet cloud forests at medium altitudes of Guatemala, Costa Rica, South America down to Bolivia. The type species *Huntleya meleagris* also occurs in Trinidad. Besides their striking colours — from deep blue to waxy red, royal purple to almost black — flowers of this group are known for their distinctive shapes, patterns, and textures. As appealing as these lovely tropical orchids are, their identification has been

confused since the first species was described in the mid-1800s. Recent DNA studies have led to a clearer understanding of relationships and, as a result of this clarity, it is now possible to sort out the taxonomic problems and identify the characteristics that set species apart. In this first book devoted to the *Huntleya* alliance, author Patricia Harding presents evidence from the scientific literature, other growers, and her own experience that will enable orchid enthusiasts everywhere to identify their plants and grow them successfully. Patricia A. Harding is an accredited American Orchid Society judge who has been growing and photographing orchids for three decades.

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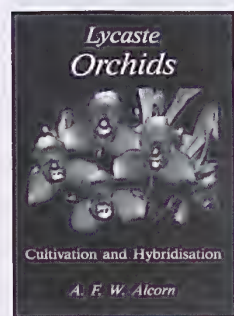
by Joyce Stewart,
Johan Hermans,
and Bob Campbell

These so-called 'Jewels of Africa' with their sparkling flowers, distinctive growth habit and floriferous nature are much prized and this account, the first to include the Angraecoid orchids from both Africa and Madagascar, is long awaited. It brings together a comprehensive set of descriptions of these most intriguing group of orchids. This book will be the essential reference for Angraecoid orchid enthusiasts for years to come. Including such horticulturally important genera as *Angraecum*, *Aeranthus*, *Aerangis* and *Jumellea*. Stewart, Herman and Campbell have all spent time in various parts of eastern and southern Africa and precise ecological information relating to habitat, altitude preferences and flowering season of individual plants will be particularly helpful to growers. The diagnostic features of each genus are illustrated and over half the species are accompanied by exquisite photographs taken in both wild habitats and in cultivation.

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LYCASTE ORCHIDS - Cultivation and Hybridisation

by A.F.W. Alcorn

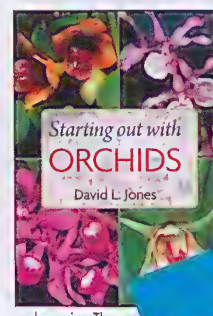
Lycaste orchids are easy to grow, and they produce flowers that range from the beautiful to the bizarre. No book previously has provided detailed cultural requirements of the Lycaste, and this book should fill that gap, and encourage new growers to take up the cultivation of this beautiful genus. A section on hybridising contains valuable information on inheritance and genetics that will benefit any hybridiser, not just the grower of Lycastes, as well as helpful hints on how to avoid pitfalls in your hybridising program. Michael Hallett, a friend of

Fred Alcorn for a number of years, co-wrote this book with Fred and has completed it posthumously. He has a background in genetics, research and botany, and a passion for plants, especially orchids.

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STARTING OUT WITH ORCHIDS

by David L. Jones

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Part Two discusses the orchids themselves with concise information on each species. They are arranged according to climatic requirements, starting with cool growing orchids progressing to the warm growing, in alphabetical sequence first with terrestrial genera, followed by the epiphytes. Both Australian and exotic species are treated together. For each entry there is specific detailed information on each species, as well as a simple table giving the basic cultivation needs and flowering season. A glossary is also included to explain unfamiliar terms.

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Cymbidium Death Wish
(Pywacket x Disney Girl)
(photo: DPB)